10/530393 JC06 Rec'd PCT/PTO 04 APR 2005

WO 2004/033657

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| <110> Antigenics, Inc. | |
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| <150> 60/416,821 | |
| <151> 2002-10-07 | |
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Gly Asn Cys Ser Arg Leu Gly Cys Gln His His Cys Val Pro Thr Leu
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Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175

Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190

Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 195 200 205

Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220

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- Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335
- Val Phe Phe Thr Asp Tyr Gly Gln Ile Pro Lys Val Glu Arg Cys Asp 340 345
- Met Asp Gly Gln Asn Arg Thr Lys Leu Val Asp Ser Lys Ile Val Phe 355
- Pro His Gly Ile Thr Leu Asp Leu Val Ser Arg Leu Val Tyr Trp Ala 370 375 380
- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385 390 395
- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410 415
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430
- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr 435 440 445
- Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455 460
- Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 465 470 475
- Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 485 490 495
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- Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly 530 535 540
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- Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575
- Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu
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- Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala
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- Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro Lys 610 620
- Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640
- Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Met Val Asp 645 650 655
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- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720
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- Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly
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Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln 100 105 110

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- Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175
- Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190
- Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 195 200 205
- Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220
- Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 225 230 235 240
- Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln Leu 245 250 255
- Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 265 270
- Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile Asp 275 280 285
- Trp Leu Thr Gly Asn Phe Tyr Phe Val Asp Asp Ile Asp Asp Arg Ile 290 295 300
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- Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335

Val Phe Phe Thr Asp Tyr Gly Gln Ile Pro Lys Val Glu Arg Cys Asp 340 345

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- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385 390 395
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- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430
- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr 435 440 445
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- Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 485 490 495
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- Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly 530 535 540
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- Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575

Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu
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Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala
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Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Met Val Asp 645 650 655

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Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720

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Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly 740 745 750

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Glu Arg Gly Val Gly Gly Ala Pro Pro Thr Val Thr Leu Leu Arg Ser 770 775 780

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Val Pro Pro Gly Gly Arg Leu Val Pro Arg Gly Ser Tyr Pro Tyr Asp 850 860

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Leu Gly Thr Glu Leu Cys Val Pro Met Ser Arg Leu Cys Asn Gly Ile 85 90 95

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- Leu Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala 420 425 430
- Asn Thr Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser
- Thr Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His 450 455 460
- Ile Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu 465 470 475 480
- Asn Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu 485 490 495
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- Ala Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr 580 585 590
- Glu Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val 595 600 605
- Ala Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro 610 615 620

Lys Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg 625 630 635 640

Lys Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Val Val 645 650 655

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Lys Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser 675 680 685

His Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly 690 695 700

Leu Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe 705 710 715 720

Tyr Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile 725 730 735

Val Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His 740 745 750

Gly Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg
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Gln Gln Val Gly Thr Asn Lys Cys Arg Val Asn Asn Gly Gly Cys Ser 805 810 815

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Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln 100 105 110

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Gly Lys Thr Cys Lys Asp Phe Asp Glu Cys Ser Val Tyr Gly Thr Cys 145 150 155 160

Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175

Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190

Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 195 200 205

Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220

Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 225 230 235 240

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- Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 265 270
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- Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335
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- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410 415
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430
- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr
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- Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455 460
- Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 465 470 475 480

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- Asn Ser His Lys Ala Arg Thr Cys Arg Cys Arg Ser Gly Phe Ser Leu 500 505 510
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- Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640
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- Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro Lys 660 665 670
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- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720

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- Leu Cys Asp Gly Asp Asn Asp Cys Gly Asn Ser Glu Asp Glu Ser Asn 915 920 925
- Ala Thr Cys Ser Ala Arg Thr Cys Pro Pro Asn Gln Phe Ser Cys Ala 930 935 940
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- Gly Asp Thr Asp Cys Met Asp Ser Ser Asp Glu Lys Ser Cys Glu 1085 1090 1095
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- Asp Ser Ala Arg Cys Ile Ser Lys Ala Trp Val Cys Asp Gly Asp 1115 1120 1125
- Asn Asp Cys Glu Asp Asn Ser Asp Glu Glu Asn Cys Glu Ser Leu 1130 1135 1140
- Ala Cys Arg Pro Pro Ser His Pro Cys Ala Asn Asn Thr Ser Val 1145 1150 1155
- Cys Leu Pro Pro Asp Lys Leu Cys Asp Gly Asn Asp Asp Cys Gly 1160 1165 1170
- Asp Gly Ser Asp Glu Gly Glu Leu Cys Asp Gln Cys Ser Leu Asn 1175 1180 1185

| Asn | Gly 1190 | Gly | Cys | Ser | Asn 1195 | Cys | Ser | Val | Ala | Pro 1200 | Gly | Glu | Gly |
|-----|-------------|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| | | | | | | | | | | | | | |

- Ile Val Cys Ser Cys Pro Leu Gly Met Glu Leu Gly Pro Asp Asn 1205 1210 1215
- His Thr Cys Gln Ile Gln Ser Tyr Cys Ala Lys His Leu Lys Cys 1220 1225 1230
- Ser Gln Lys Cys Asp Gln Asn Lys Phe Ser Val Lys Cys Ser Cys 1235 1240 1245
- Tyr Glu Gly Trp Val Leu Glu Pro Asp Gly Glu Ser Cys Arg Ser 1250 1255 1260
- Leu Asp Pro Phe Lys Pro Phe Ile Ile Phe Ser Asn Arg His Glu 1265 1270 1275
- Ile Arg Arg Ile Asp Leu His Lys Gly Asp Tyr Ser Val Leu Val 1280 1285 1290
- Pro Gly Leu Arg Asn Thr Ile Ala Leu Asp Phe His Leu Ser Gln 1295 1300 1305
- Ser Ala Leu Tyr Trp Thr Asp Val Val Glu Asp Lys Ile Tyr Arg 1310 1315 1320
- Gly Lys Leu Leu Asp Asn Gly Ala Leu Thr Ser Phe Glu Val Val 1325 1330 1335
- Ile Gln Tyr Gly Leu Ala Thr Pro Glu Gly Leu Ala Val Asp Trp 1340 1345 1350
- Ile Ala Gly Asn Ile Tyr Trp Val Glu Ser Asn Leu Asp Gln Ile 1355 1360 1365
- Glu Val Ala Lys Leu Asp Gly Thr Leu Arg Thr Thr Leu Leu Ala 1370 1375 1380
- Gly Asp Ile Glu His Pro Arg Ala Ile Ala Leu Asp Pro Arg Asp 1385 1390 1395
- Gly Ile Leu Phe Trp Thr Asp Trp Asp Ala Ser Leu Pro Arg Ile 1400 1405 1410

- Glu Ala Ala Ser Met Ser Gly Ala Gly Arg Arg Thr Val His Arg 1415 1420 1425
- Glu Thr Gly Ser Gly Gly Trp Pro Asn Gly Leu Thr Val Asp Tyr 1430 1435 1440
- Leu Glu Lys Arg Ile Leu Trp Ile Asp Ala Arg Ser Asp Ala Ile 1445 1450 1455
- Tyr Ser Ala Arg Tyr Asp Gly Ser Gly His Met Glu Val Leu Arg 1460 1465 1470
- Gly His Glu Phe Leu Ser His Pro Phe Ala Val Thr Leu Tyr Gly 1475
- Gly Glu Val Tyr Trp Thr Asp Trp Arg Thr Asn Thr Leu Ala Lys 1490 1495 1500
- Ala Asn Lys Trp Thr Gly His Asn Val Thr Val Val Gln Arg Thr 1505 1510 1515
- Asn Thr Gln Pro Phe Asp Leu Gln Val Tyr His Pro Ser Arg Gln 1520 1525 1530
- Pro Met Ala Pro Asn Pro Cys Glu Ala Asn Gly Gly Gln Gly Pro 1535 1540 1545
- Cys Ser His Leu Cys Leu Ile Asn Tyr Asn Arg Thr Val Ser Cys 1550 1560
- Ala Cys Pro His Leu Met Lys Leu His Lys Asp Asn Thr Thr Cys 1565 1570 1575
- Tyr Glu Phe Lys Lys Phe Leu Leu Tyr Ala Arg Gln Met Glu Ile 1580 1585 1590
- Arg Gly Val Asp Leu Asp Ala Pro Tyr Tyr Asn Tyr Ile Ile Ser 1595 1600 1605
- Phe Thr Val Pro Asp Ile Asp Asn Val Thr Val Leu Asp Tyr Asp 1610 1615 1620
- Ala Arg Glu Gln Arg Val Tyr Trp Ser Asp Val Arg Thr Gln Ala 1625 1630 1635

| Ile | Lys 1640 | Arg | Ala | Phe | Ile | Asn 1645 | Gly | Thr | Gly | Val | Glu 1650 | Thr | Val | Val |
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| Ser | Ala 1655 | Asp | Leu | Pro | Asn | Ala 1660 | His | Gly | Leu | Ala | Val 1665 | Asp | Trp | Val |
| Ser | Arg 1670 | Asn | Leu | Phe | Trp | Thr 1675 | Ser | туг | Asp | Thr | Asn 1680 | Lys | Lys | Gln |
| Ile | Asn 1685 | Val | Ala | Arg | Leu | Asp 1690 | Gly | Ser | Phe | Lys | Asn 1695 | Ala | Val | Val |
| Gln | Gly 1700 | | Glu | Gln | Pro | His 1705 | _ | Leu | Val | Val | His 1710 | Pro | Leu | Arg |
| Gly | Lys 1715 | Leu | Tyr | Trp | Thr | Asp 1720 | Gly | Asp | Asn | Ile | Ser 1725 | Met | Ala | Asn |
| Met | Asp 1730 | Gly | Ser | Asn | Arg | Thr 1735 | | Leu | Phe | Ser | Gly 1740 | | Lys | Gly |
| Pro | Val 1745 | Gly | Leu | Ala | Ile | Asp 1750 | Phe | Pro | Glu | Ser | Lys 1755 | Leu | Tyr | Trp |
| Ile | Ser 1760 | Ser | Gly | Asn | His | Thr 1765 | | Asn | Arg | Cys | Asn 1770 | | Asp | Gly |
| Ser | Gly 1775 | Leu | Glu | Val | Ile | Asp 1780 | | Met | Arg | Ser | Gln 1785 | | Gly | Lys |
| Ala | Thr 1790 | Ala | Leu | Ala | Ile | Met 1795 | | Asp | Lys | Leu | Trp 1800 | | Ala | Asp |
| Gln | Val 1805 | Ser | Glu | Lys | Met | Gly 1810 | | Cys | Ser | Lys | Ala 1815 | - | Gly | Ser |
| Gly | Ser 1820 | Val | Val | Leu | Arg | Asn 1825 | | Thr | Thr | Leu | Val 1830 | | His | Met |
| Lys | Val 1835 | | Asp | Glu | Ser | Ile 1840 | | Leu | Asp | His | Lys 1845 | _ | Thr | Asn |
| Pro | Cys 1850 | | Val | Asn | Asn | Gly 1855 | - | Cys | Ser | Gln | Leu 1860 | _ | Leu | Pro |

Thr Ser Glu Thr Thr Arg Ser Cys Met Cys Thr Ala Gly Tyr Ser 1865 1870 1875

- Leu Arg Ser Gly Gln Gln Ala Cys Glu Gly Val Gly Ser Phe Leu 1880 1885 1890
- Leu Tyr Ser Val His Glu Gly Ile Arg Gly Ile Pro Leu Asp Pro 1895 1900 1905
- Asn Asp Lys Ser Asp Ala Leu Val Pro Val Ser Gly Thr Ser Leu 1910 1915 1920
- Ala Val Gly Ile Asp Phe His Ala Glu Asn Asp Thr Ile Tyr Trp 1925 1930 1935
- Val Asp Met Gly Leu Ser Thr Ile Ser Arg Ala Lys Arg Asp Gln 1940 1945 1950
- Thr Trp Arg Glu Asp Val Val Thr Asn Gly Ile Gly Arg Val Glu 1955 1960 1965
- Gly Ile Ala Val Asp Trp Ile Ala Gly Asn Ile Tyr Trp Thr Asp 1970 1975 1980
- Gln Gly Phe Asp Val Ile Glu Val Ala Arg Leu Asn Gly Ser Phe 1985 1990 1995
- Arg Tyr Val Val Ile Ser Gln Gly Leu Asp Lys Pro Arg Ala Ile 2000 2005 2010
- Thr Val His Pro Glu Lys Gly Tyr Leu Phe Trp Thr Glu Trp Gly 2015 2020 2025
- Gln Tyr Pro Arg Ile Glu Arg Ser Arg Leu Asp Gly Thr Glu Arg 2030 2035 2040
- Val Val Leu Val Asn Val Ser Ile Ser Trp Pro Asn Gly Ile Ser 2045 2050 2055
- Val Asp Tyr Gln Asp Gly Lys Leu Tyr Trp Cys Asp Ala Arg Thr 2060 2065 2070
- Asp Lys Ile Glu Arg Ile Asp Leu Glu Thr Gly Glu Asn Arg Glu
 2075 2080 2085

| Val | Val -2090 | Leu | Ser | Ser | Asn | Asn 2095 | Met | Asp | Met | Phe | Ser 2100 | Val | Ser | Val |
|-----|--------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Phe | Glu 2105 | Asp | Phe | Ile | Tyr | Trp 2110 | Ser | Asp | Arg | Thr | His 2115 | Ala | Asn | Gly |
| Ser | Ile 2120 | Lys | Arg | Gly | Ser | Lys 2125 | Asp | Asn | Ala | Thr | Asp 2130 | Ser | Val | Pro |
| Leu | Arg 2135 | Thr | Gly | Ile | Gly | Val 2140 | Gln | Leu | Lys | Asp | Ile 2145 | Lys | Val | Phe |
| Asn | Arg 2150 | Asp | Arg | Gln | Lys | Gly 2155 | Thr | Asn | Val | Cys | Ala 2160 | | Ala | Asn |
| Gly | Gly 2165 | Cys | Gln | Gln | Leu | Cys 2170 | Leu | Tyr | Arg | Gly | Arg 2175 | | Gln | Arg |
| Ala | Cys 2180 | Ala | Cys | Ala | His | Gly 2185 | Met | Leu | Ala | Glu | Asp 2190 | Gly | Ala | Ser |
| Сув | Arg 2195 | Glu | Tyr | Ala | Gly | Tyr 2200 | Leu | Leu | Tyr | Ser | Glu 2205 | Arg | Thr | Ile |
| Leu | Lys 2210 | Ser | Ile | His | Leu | Ser 2215 | Asp | Glu | Arg | Asn | Leu 2220 | Asn | Ala | Pro |
| Val | Gln 2225 | Pro | Phe | Glu | Asp | Pro 2230 | Glu | His | Met | Lys | Asn 2235 | Val | Ile | Ala |
| Leu | Ala 2240 | Phe | Asp | Tyr | Arg | Ala 2245 | Gly | Thr | Ser | Pro | Gly 2250 | Thr | Pro | Asn |
| Arg | Ile 2255 | Phe | Phe | Ser | Asp | Ile 2260 | His | Phe | Gly | Asn | Ile 2265 | Gln | Gln | Ile |
| Asn | Asp 2270 | Asp | Gly | Ser | Arg | Arg 2275 | Ile | Thr | Ile | Val | Glu 2280 | Asn | Val | Gly |
| Ser | Val 2285 | Glu | Gly | Leu | Ala | Tyr 2290 | His | Arg | Gly | Trp | Asp 2295 | Thr | Leu | Tyr |
| Trp | Thr 2300 | Ser | Tyr | Thr | Thr | Ser 2305 | Thr | Ile | Thr | Arg | His 2310 | Thr | Val | Asp |

Gln Thr Arg Pro Gly Ala Phe Glu Arg Glu Thr Val Ile Thr Met 2315 2320 2325

- Ser Gly Asp Asp His Pro Arg Ala Phe Val Leu Asp Glu Cys Gln 2330 2340
- Asn Leu Met Phe Trp Thr Asn Trp Asn Glu Gln His Pro Ser Ile 2345 2350 2355
- Met Arg Ala Ala Leu Ser Gly Ala Asn Val Leu Thr Leu Ile Glu 2360 2365 2370
- Lys Asp Ile Arg Thr Pro Asn Gly Leu Ala Ile Asp His Arg Ala 2375 2380 2385
- Glu Lys Leu Tyr Phe Ser Asp Ala Thr Leu Asp Lys Ile Glu Arg 2390 2395 2400
- Cys Glu Tyr Asp Gly Ser His Arg Tyr Val Ile Leu Lys Ser Glu 2405 2410 2415
- Pro Val His Pro Phe Gly Leu Ala Val Tyr Gly Glu His Ile Phe 2420 2425 2430
- Trp Thr Asp Trp Val Arg Arg Ala Val Gln Arg Ala Asn Lys His 2435 2440 2445
- Val Gly Ser Asn Met Lys Leu Leu Arg Val Asp Ile Pro Gln Gln 2450 2455 2460
- Pro Met Gly Ile Ile Ala Val Ala Asn Asp Thr Asn Ser Cys Glu 2465 2470 2475
- Leu Ser Pro Cys Arg Ile Asn Asn Gly Gly Cys Gln Asp Leu Cys 2480 2485 2490
- Leu Leu Thr His Gln Gly His Val Asn Cys Ser Cys Arg Gly Gly 2495 2500 2505
- Arg Ile Leu Gln Asp Asp Leu Thr Cys Arg Ala Val Asn Ser Ser 2510 2520
- Cys Arg Ala Gln Asp Glu Phe Glu Cys Ala Asn Gly Glu Cys Ile 2525 2530 2535

Asn Phe Ser Leu Thr Cys Asp Gly Val Pro His Cys Lys Asp Lys 2540 2545 2550

- Ser Asp Glu Lys Pro Ser Tyr Cys Asn Ser Arg Arg Cys Lys Lys 2555 2560 2565
- Thr Phe Arg Gln Cys Ser Asn Gly Arg Cys Val Ser Asn Met Leu 2570 2580
- Trp Cys Asn Gly Ala Asp Asp Cys Gly Asp Gly Ser Asp Glu Ile 2585 2590 2595
- Pro Cys Asn Lys Thr Ala Cys Gly Val Gly Glu Phe Arg Cys Arg 2600 2605 2610
- Asp Gly Thr Cys Ile Gly Asn Ser Ser Arg Cys Asn Gln Phe Val 2615 2620 2625
- Asp Cys Glu Asp Ala Ser Asp Glu Met Asn Cys Ser Ala Thr Asp 2630 2635 2640
- Cys Ser Ser Tyr Phe Arg Leu Gly Val Lys Gly Val Leu Phe Gln 2645 2655
- Pro Cys Glu Arg Thr Ser Leu Cys Tyr Ala Pro Ser Trp Val Cys 2660 2665 2670
- Asp Gly Ala Asn Asp Cys Gly Asp Tyr Ser Asp Glu Arg Asp Cys 2675 2680 2685
- Pro Gly Val Lys Arg Pro Arg Cys Pro Leu Asn Tyr Phe Ala Cys 2690 2695 2700
- Pro Ser Gly Arg Cys Ile Pro Met Ser Trp Thr Cys Asp Lys Glu 2705 2710 2715
- Asp Asp Cys Glu His Gly Glu Asp Glu Thr His Cys Asn Lys Phe 2720 2725 2730
- Cys Ser Glu Ala Gln Phe Glu Cys Gln Asn His Arg Cys Ile Ser 2735 2740 2745
- Lys Gln Trp Leu Cys Asp Gly Ser Asp Asp Cys Gly Asp Gly Ser 2750 2760

- Asp Glu Ala Ala His Cys Glu Gly Lys Thr Cys Gly Pro Ser Ser 2765 2770 2775
- Phe Ser Cys Pro Gly Thr His Val Cys Val Pro Glu Arg Trp Leu 2780 2785
- Cys Asp Gly Asp Lys Asp Cys Ala Asp Gly Ala Asp Glu Ser Ile 2795 2800 2805
- Ala Ala Gly Cys Leu Tyr Asn Ser Thr Cys Asp Asp Arg Glu Phe 2810 2815 2820
- Met Cys Gln Asn Arg Gln Cys Ile Pro Lys His Phe Val Cys Asp 2825 2830 2835
- His Asp Arg Asp Cys Ala Asp Gly Ser Asp Glu Ser Pro Glu Cys 2840 2845
- Glu Tyr Pro Thr Cys Gly Pro Ser Glu Phe Arg Cys Ala Asn Gly 2855 2860 2865
- Arg Cys Leu Ser Ser Arg Gln Trp Glu Cys Asp Gly Glu Asn Asp 2870 2875
- Cys His Asp Gln Ser Asp Glu Ala Pro Lys Asn Pro His Cys Thr 2885 2890 2895
- Ser Pro Glu His Lys Cys Asn Ala Ser Ser Gln Phe Leu Cys Ser 2900 2905 2910
- Ser Gly Arg Cys Val Ala Glu Ala Leu Leu Cys Asn Gly Gln Asp 2915 2920 2925
- Asp Cys Gly Asp Ser Ser Asp Glu Arg Gly Cys His Ile Asn Glu 2930 2935 2940
- Cys Leu Ser Arg Lys Leu Ser Gly Cys Ser Gln Asp Cys Glu Asp 2945 2950 2955
- Leu Lys Ile Gly Phe Lys Cys Arg Cys Arg Pro Gly Phe Arg Leu 2960 2965 2970
- Lys Asp Asp Gly Arg Thr Cys Ala Asp Val Asp Glu Cys Ser Thr 2975 2980 2985

- Thr Phe Pro Cys Ser Gln Arg Cys Ile Asn Thr His Gly Ser Tyr 2990 2995 3000
- Lys Cys Leu Cys Val Glu Gly Tyr Ala Pro Arg Gly Gly Asp Pro 3005 3010 3015
- His Ser Cys Lys Ala Val Thr Asp Glu Glu Pro Phe Leu Ile Phe 3020 3030
- Ala Asn Arg Tyr Tyr Leu Arg Lys Leu Asn Leu Asp Gly Ser Asn 3035 3040 3045
- Tyr Thr Leu Leu Lys Gln Gly Leu Asn Asn Ala Val Ala Leu Asp 3050 3055 3060
- Phe Asp Tyr Arg Glu Gln Met Ile Tyr Trp Thr Asp Val Thr Thr 3065 3070 3075
- Gln Gly Ser Met Ile Arg Arg Met His Leu Asn Gly Ser Asn Val 3080 3085 3090
- Gln Val Leu His Arg Thr Gly Leu Ser Asn Pro Asp Gly Leu Ala 3095 3100 3105
- Val Asp Trp Val Gly Gly Asn Leu Tyr Trp Cys Asp Lys Gly Arg 3110 3115 3120
- Asp Thr Ile Glu Val Ser Lys Leu Asn Gly Ala Tyr Arg Thr Val 3125 3130 3135
- Leu Val Ser Ser Gly Leu Arg Glu Pro Arg Ala Leu Val Val Asp 3140 3145 3150
- Val Gln Asn Gly Tyr Leu Tyr Trp Thr Asp Trp Gly Asp His Ser 3155 3160 3165
- Leu Ile Gly Arg Ile Gly Met Asp Gly Ser Ser Arg Ser Val Ile 3170 3175 3180
- Val Asp Thr Lys Ile Thr Trp Pro Asn Gly Leu Thr Leu Asp Tyr 3185 3190 3195
- Val Thr Glu Arg Ile Tyr Trp Ala Asp Ala Arg Glu Asp Tyr Ile 3200 3205 3210

- Glu Phe Ala Ser Leu Asp Gly Ser Asn Arg His Val Val Leu Ser 3215 3220 3225
- Gln Asp Ile Pro His Ile Phe Ala Leu Thr Leu Phe Glu Asp Tyr 3230 3235 3240
- Val Tyr Trp Thr Asp Trp Glu Thr Lys Ser Ile Asn Arg Ala His 3245 3250 3255
- Lys Thr Thr Gly Thr Asn Lys Thr Leu Leu Ile Ser Thr Leu His 3260 3265 3270
- Arg Pro Met Asp Leu His Val Phe His Ala Leu Arg Gln Pro Asp 3275 3280 3285
- Val Pro Asn His Pro Cys Lys Val Asn Asn Gly Gly Cys Ser Asn 3290 3295 3300
- Leu Cys Leu Leu Ser Pro Gly Gly Gly His Lys Cys Ala Cys Pro 3305 3310 3315
- Thr Asn Phe Tyr Leu Gly Ser Asp Gly Arg Thr Cys Val Ser Asn 3320 3325 3330
- Cys Thr Ala Ser Gln Phe Val Cys Lys Asn Asp Lys Cys Ile Pro 3335 3340 3345
- Phe Trp Trp Lys Cys Asp Thr Glu Asp Asp Cys Gly Asp His Ser 3350 3355 3360
- Asp Glu Pro Pro Asp Cys Pro Glu Phe Lys Cys Arg Pro Gly Gln 3365 3370 3375
- Phe Gln Cys Ser Thr Gly Ile Cys Thr Asn Pro Ala Phe Ile Cys 3380 3385 3390
- Asp Gly Asp Asn Asp Cys Gln Asp Asn Ser Asp Glu Ala Asn Cys 3395 3400 3405
- Asp Ile His Val Cys Leu Pro Ser Gln Phe Lys Cys Thr Asn Thr 3410 3415 3420
- Asn Arg Cys Ile Pro Gly Ile Phe Arg Cys Asn Gly Gln Asp Asn 3425 3430 3435

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WO 2004/033657

| Cys | Gly 3440 | Asp | Gly | Glu | Asp | Glu 3445 | Arg | Asp | Cys | Pro | Glu 3450 | Val | Thr | Cys |
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| Ala | Pro 3455 | Asn | Gln | Phe | Gln | Cys 3460 | Ser | Ile | Thr | Lys | Arg 3465 | Cys | Ile | Pro |
| Arg | Val 3470 | Trp | Val | Cys | Asp | Arg 3475 | Asp | Asn | Asp | Cys | Val 3480 | Asp | Gly | Ser |
| Asp | Glu 3485 | Pro | Ala | Asn | Cys | Thr 3490 | | Met | Thr | Cys | Gly 3495 | Val | Asp | Glu |
| Phe | Arg 3500 | Cys | Lys | Asp | Ser | Gly 3505 | Arg | Cys | Ile | Pro | Ala 3510 | Arg | Trp | Lys |
| Cys | Asp 3515 | Gly | Glu | Asp | Asp | Cys 3520 | Gly | Asp | Gly | Ser | Asp 3525 | Glu | Pro | Lys |
| Glu | Glu 3530 | Cys | Asp | Glu | Arg | Thr 3535 | Cys | Glu | Pro | Tyr | Gln 3540 | Phe | Arg | Cys |
| Lys | Asn 3545 | Asn | Arg | Cys | Val | Pro 3550 | Gly | Arg | Trp | Gln | Cys 3555 | Asp | Tyr | Asp |
| Asn | Asp 3560 | Cys | Gly | Asp | Asn | Ser 3565 | Asp | Glu | Glu | Ser | Cys 3570 | Thr | Pro | Arg |
| Pro | Cys 3575 | Ser | Glu | Ser | Glu | Phe 3580 | Ser | Cys | Ala | Asn | Gly 3585 | Arg | Cys | Ile |
| Ala | Gly 3590 | Arg | Trp | Lys | Cys | Asp 3595 | Gly | Asp | | | Cys 3600 | | Asp | Gly |
| Ser | Asp 3605 | Glu | Lys | Asp | Cys | Thr 3610 | Pro | Arg | Cys | Asp | Met 3615 | Asp | Gln | Phe |
| Gln | Cys 3620 | Lys | Ser | Gly | His | Cys 3625 | Ile | Pro | Leu | Arg | Trp 3630 | Arg | Cys | Asp |
| Ala | Asp 3635 | Ala | Asp | Cys | Met | Asp 3640 | | Ser | Asp | Glu | Glu 3645 | Ala | Cys | Gly |
| Thr | Gly 3650 | Val | Arg | Thr | Cys | Pro 3655 | Leu | Asp | Glu | Phe | Gln 3660 | Cys | Asn | Asn |

Thr Leu Cys Lys Pro Leu Ala Trp Lys Cys Asp Gly Glu Asp Asp 3665 3670 3675

- Cys Gly Asp Asn Ser Asp Glu Asn Pro Glu Glu Cys Ala Arg Phe 3680 3685 3690
- Val Cys Pro Pro Asn Arg Pro Phe Arg Cys Lys Asn Asp Arg Val 3695 3700 3705
- Cys Leu Trp Ile Gly Arg Gln Cys Asp Gly Thr Asp Asn Cys Gly 3710 3715 3720
- Asp Gly Thr Asp Glu Glu Asp Cys Glu Pro Pro Thr Ala His Thr 3725 3730 3735
- Thr His Cys Lys Asp Lys Lys Glu Phe Leu Cys Arg Asn Gln Arg 3740 3745 3750
- Cys Leu Ser Ser Ser Leu Arg Cys Asn Met Phe Asp Asp Cys Gly 3755 3760 3765
- Asp Gly Ser Asp Glu Glu Asp Cys Ser Ile Asp Pro Lys Leu Thr 3770 3780
- Ser Cys Ala Thr Asn Ala Ser Ile Cys Gly Asp Glu Ala Arg Cys 3785 3790 3795
- Val Arg Thr Glu Lys Ala Ala Tyr Cys Ala Cys Arg Ser Gly Phe 3800 3805
- His Thr Val Pro Gly Gln Pro Gly Cys Gln Asp Ile Asn Glu Cys 3815 3820 3825
- Leu Arg Phe Gly Thr Cys Ser Gln Leu Cys Asn Asn Thr Lys Gly 3830 3835
- Gly His Leu Cys Ser Cys Ala Arg Asn Phe Met Lys Thr His Asn 3845 3850 3855
- Thr Cys Lys Ala Glu Gly Ser Glu Tyr Gln Val Leu Tyr Ile Ala 3860 3865 3870
- Asp Asp Asn Glu Ile Arg Ser Leu Phe Pro Gly His Pro His Ser 3875 3880 3885

| Ala | Tyr 3890 | Glu | Gln | Ala | Phe | Gln 3895 | Gly | Asp | Glu | Ser | Val 3900 | Arg | Ile | Asp |
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- Ala Met Asp Val His Val Lys Ala Gly Arg Val Tyr Trp Thr Asn 3905 3910 3915
- Trp His Thr Gly Thr Ile Ser Tyr Arg Ser Leu Pro Pro Ala Ala 3920 3925 3930
- Pro Pro Thr Thr Ser Asn Arg His Arg Arg Gln Ile Asp Arg Gly 3935 3940 3945
- Val Thr His Leu Asn Ile Ser Gly Leu Lys Met Pro Arg Gly Ile 3950 3955 3960
- Ala Ile Asp Trp Val Ala Gly Asn Val Tyr Trp Thr Asp Ser Gly 3965 3970 3975
- Arg Asp Val Ile Glu Val Ala Gln Met Lys Gly Glu Asn Arg Lys 3980 3985 3990
- Thr Leu Ile Ser Gly Met Ile Asp Glu Pro His Ala Ile Val Val
 3995 4000 4005
- Asp Pro Leu Arg Gly Thr Met Tyr Trp Ser Asp Trp Gly Asn His 4010 4015 4020
- Pro Lys Ile Glu Thr Ala Ala Met Asp Gly Thr Leu Arg Glu Thr 4025 4030 4035
- Leu Val Gln Asp Asn Ile Gln Trp Pro Thr Gly Leu Ala Val Asp 4040 4045 4050
- Tyr His Asn Glu Arg Leu Tyr Trp Ala Asp Ala Lys Leu Ser Val 4055 4060 4065
- Ile Gly Ser Ile Arg Leu Asn Gly Thr Asp Pro Ile Val Ala Ala 4070 4080
- Asp Ser Lys Arg Gly Leu Ser His Pro Phe Ser Ile Asp Val Phe 4085 4090 4095
- Glu Asp Tyr Ile Tyr Gly Val Thr Tyr Ile Asn Asn Arg Val Phe 4100 4105 4110

- Lys Ile His Lys Phe Gly His Ser Pro Leu Val Asn Leu Thr Gly 4115 4120 4125
- Gly Leu Ser His Ala Ser Asp Val Val Leu Tyr His Gln His Lys 4130 4135
- Gln Pro Glu Val Thr Asn Pro Cys Asp Arg Lys Lys Cys Glu Trp 4145 4150 4155
- Leu Cys Leu Leu Ser Pro Ser Gly Pro Val Cys Thr Cys Pro Asn 4160 4165 4170
- Gly Lys Arg Leu Asp Asn Gly Thr Cys Val Pro Val Pro Ser Pro 4175 4180 4185
- Thr Pro Pro Pro Asp Ala Pro Arg Pro Gly Thr Cys Asn Leu Gln 4190 4200
- Cys Phe Asn Gly Gly Ser Cys Phe Leu Asn Ala Arg Arg Gln Pro 4205 4210 4215
- Lys Cys Arg Cys Gln Pro Arg Tyr Thr Gly Asp Lys Cys Glu Leu 4220 4225 4230
- Asp Gln Cys Trp Glu His Cys Arg Asn Gly Gly Thr Cys Ala Ala 4235 4240 4245
- Ser Pro Ser Gly Met Pro Thr Cys Arg Cys Pro Thr Gly Phe Thr 4250 4255 4260
- Gly Pro Lys Cys Thr Gln Gln Val Cys Ala Gly Tyr Cys Ala Asn 4265 4270 4275
- Asn Ser Thr Cys Thr Val Asn Gln Gly Asn Gln Pro Gln Cys Arg 4280 4285 4290
- Cys Leu Pro Gly Phe Leu Gly Asp Arg Cys Gln Tyr Arg Gln Cys 4295 4300 4305
- Ser Gly Tyr Cys Glu Asn Phe Gly Thr Cys Gln Met Ala Ala Asp 4310 4315 4320
- Gly Ser Arg Gln Cys Arg Cys Thr Ala Tyr Phe Glu Gly Ser Arg 4325 4330 4335

Cys Glu Val Asn Lys Cys Ser Arg Cys Leu Glu Gly Ala Cys Val 4340 4345 4350

Val Asn Lys Gln Ser Gly Asp Val Thr Cys Asn Cys Thr Asp Gly
4355 4360 4365

Arg Val Ala Pro Ser Cys Leu Thr Cys Val Gly His Cys Ser Asn 4370 4380

Gly Gly Ser Cys Thr Met Asn Ser Lys Met Met Pro Glu Cys Gln 4385 4390 4395

Cys Pro Pro His Met Thr Gly Pro Arg Cys Glu Glu His Val Phe 4400 4405 4410

Ser Gln Gln Gln Pro Gly His Ile Ala Ser Ile Leu Ile Pro Leu 4415 4420 4425

Leu Leu Leu Leu Leu Val Leu Val Ala Gly Val Val Phe Trp 4430 4435 4440

Tyr Lys Arg Arg Val Gln Gly Ala Lys Gly Phe Gln His Gln Arg 4445 4450 4455

Met Thr Asn Gly Ala Met Asn Val Glu Ile Gly Asn Pro Thr Tyr 4460 4465 4470

Lys Met Tyr Glu Gly Gly Pro Asp Asp Val Gly Gly Leu Leu 4475 4480 4485

Asp Ala Asp Phe Ala Leu Asp Pro Asp Lys Pro Thr Asn Phe Thr 4490 4495 4500

Asn Pro Val Tyr Ala Thr Leu Tyr Met Gly Gly His Gly Ser Arg 4505 4510 4515

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Gly Pro Glu Asp Glu Ile Gly Asp Pro Leu Ala 4535 4540

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<212> PRT

<213> H. sapiens

<400> 6

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1 5 10 15

- Val Ala Ala Ile Asp Ala Pro Lys Thr Cys Ser Pro Lys Gln Phe 20 25 30
- Ala Cys Arg Asp Gln Ile Thr Cys Ile Ser Lys Gly Trp Arg Cys Asp 35 40 45
- Gly Glu Arg Asp Cys Pro Asp Gly Ser Asp Glu Ala Pro Glu Ile Cys
 50 55 60
- Pro Gln Ser Lys Ala Gln Arg Cys Gln Pro Asn Glu His Asn Cys Leu 65 70 75 80
- Gly Thr Glu Leu Cys Val Pro Met Ser Arg Leu Cys Asn Gly Val Gln 85 90 95
- Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln 100 105 110
- Gly Asn Cys Ser Arg Leu Gly Cys Gln His His Cys Val Pro Thr Leu 115 120 125
- Asp Gly Pro Thr Cys Tyr Cys Asn Ser Ser Phe Gln Leu Gln Ala Asp 130 135 140
- Gly Lys Thr Cys Lys Asp Phe Asp Glu Cys Ser Val Tyr Gly Thr Cys 145 150 155 160
- Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175
- Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190
- Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 195 200 205
- Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220
- Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 225 230 235 240

Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln Leu 245 250 255

- Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 265 270
- Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile Asp 275 280 285
- Trp Leu Thr Gly Asn Phe Tyr Phe Val Asp Asp Ile Asp Asp Arg Ile 290 295 300
- Phe Val Cys Asn Arg Asn Gly Asp Thr Cys Val Thr Leu Leu Asp Leu 305 310 315
- Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335
- Val Phe Phe Thr Asp Tyr Gly Gln Ile Pro Lys Val Glu Arg Cys Asp 340 345 350
- Met Asp Gly Gln Asn Arg Thr Lys Leu Val Asp Ser Lys Ile Val Phe 355 360 365
- Pro His Gly Ile Thr Leu Asp Leu Val Ser Arg Leu Val Tyr Trp Ala 370 375 380
- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385 390 395
- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410 415
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430
- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr 435 440 445
- Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455 460
- Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 465 470 475 480

Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 485 490 495

- Asn Ser His Lys Ala Arg Thr Cys Arg Cys Arg Ser Gly Phe Ser Leu 500 505 510
- Gly Ser Asp Gly Lys Ser Cys Lys Lys Pro Glu His Glu Leu Phe Leu 515 520 525
- Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly 530 535 540
- Ala Lys Val Pro Asp Glu His Met Ile Pro Ile Glu Asn Leu Met Asn 545 550 555 560
- Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575
- Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu 580 585
- Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala 595 600 605
- Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro Lys 610 615 620
- Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640
- Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Val Val Asp 645 650 655
- Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro Lys 660 665 670
- Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser His
 675 680 685
- Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly Leu 690 695 700
- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720

- Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile Val 725 730 735
- Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly
 740 745 750
- Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg Leu
 755 760 765
- Glu Arg Gly Val Gly Gly Ala Pro Pro Thr Val Thr Leu Leu Arg Ser
 770 775 780
- Glu Arg Pro Pro Ile Phe Glu Ile Arg Met Tyr Asp Ala Gln Gln Gln 785 790 795 800
- Gln Val Gly Thr Asn Lys Cys Arg Val Asn Asn Gly Gly Cys Ser Ser 805 810 815
- Leu Cys Leu Ala Thr Pro Gly Ser Arg Gln Cys Ala Cys Ala Glu Asp 820 825 830
- Gln Val Leu Asp Ala Asp Gly Val Thr Cys Leu Ala Asn Pro Ser Tyr 835 840 845
- Val Pro Pro Pro Gln Cys Gln Pro Gly Glu Phe Ala Cys Ala Asn Ser 850 855 860
- Arg Cys Ile Gln Glu Arg Trp Lys Cys Asp Gly Asp Asn Asp Cys Leu 865 870 875 880
- Asp Asn Ser Asp Glu Ala Pro Ala Leu Cys His Gln His Thr Cys Pro 885 890 895
- Ser Asp Arg Phe Lys Cys Glu Asn Asn Arg Cys Ile Pro Asn Arg Trp 900 905 910
- Leu Cys Asp Gly Asp Asn Asp Cys Gly Asn Ser Glu Asp Glu Ser Asn 915 920 925
- Ala Thr Cys Ser Ala Arg Thr Cys Pro Pro Asn Gln Phe Ser Cys Ala 930 935 940
- Ser Gly Arg Cys Ile Pro Ile Ser Trp Thr Cys Asp Leu Asp Asp 945 950 955 960

- Cys Gly Asp Arg Ser Asp Glu Ser Ala Ser Cys Ala Tyr Pro Thr Cys 965 970 975
- Phe Pro Leu Thr Gln Phe Thr Cys Asn Asn Gly Arg Cys Ile Asn Ile 980 985
- Asn Trp Arg Cys Asp Asn Asp Asn Asp Cys Gly Asp Asn Ser Asp Glu
 995 1000 1005
- Ala Gly Cys Ser His Ser Cys Ser Ser Thr Gln Phe Lys Cys Asn 1010 1015
- Ser Gly Arg Cys Ile Pro Glu His Trp Thr Cys Asp Gly Asp Asn 1025
- Asp Cys Gly Asp Tyr Ser Asp Glu Thr His Ala Asn Cys Thr Asn 1040
- Gln Ala Thr Arg Pro Pro Gly Gly Cys His Thr Asp Glu Phe Gln 1055
- Cys Arg Leu Asp Gly Leu Cys Ile Pro Leu Arg Trp Arg Cys Asp 1070 1075
- Gly Asp Thr Asp Cys Met Asp Ser Ser Asp Glu Lys Ser Cys Glu 1085
- Gly Val Thr His Val Cys Asp Pro Ser Val Lys Phe Gly Cys Lys
- Asp Ser Ala Arg Cys Ile Ser Lys Ala Trp Val Cys Asp Gly Asp
- Asn Asp Cys Glu Asp Asn Ser Asp Glu Glu Asn Cys Glu Ser Leu 1130 1135 1140
- Ala Cys Arg Pro Pro Ser His Pro Cys Ala Asn Asn Thr Ser Val 1145
- Cys Leu Pro Pro Asp Lys Leu Cys Asp Gly Asn Asp Asp Cys Gly 1160
- Asp Gly Ser Asp Glu Gly Glu Leu Cys Asp Gln Cys Ser Leu Asn 1175

Asn Gly Gly Cys Ser His Asn Cys Ser Val Ala Pro Gly Glu Gly
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- Ile Val Cys Ser Cys Pro Leu Gly Met Glu Leu Gly Pro Asp Asn 1205 1210 1215
- His Thr Cys Gln Ile Gln Ser Tyr Cys Ala Lys His Leu Lys Cys 1220 1225 1230
- Ser Gln Lys Cys Asp Gln Asn Lys Phe Ser Val Lys Cys Ser Cys 1235
- Tyr Glu Gly Trp Val Leu Glu Pro Asp Gly Glu Ser Cys Arg Ser 1250 1255 1260
- Leu Asp Pro Phe Lys Pro Phe Ile Ile Phe Ser Asn Arg His Glu 1265 1270
- Ile Arg Arg Ile Asp Leu His Lys Gly Asp Tyr Ser Val Leu Val 1280 1285 1290
- Pro Gly Leu Arg Asn Thr Ile Ala Leu Asp Phe His Leu Ser Gln 1295 1300 1305
- Ser Ala Leu Tyr Trp Thr Asp Val Val Glu Asp Lys Ile Tyr Arg 1310 1315 1320
- Gly Lys Leu Leu Asp Asn Gly Ala Leu Thr Ser Phe Glu Val Val 1325 1330 1335
- Ile Gln Tyr Gly Leu Ala Thr Pro Glu Gly Leu Ala Val Asp Trp 1340 1345 1350
- Ile Ala Gly Asn Ile Tyr Trp Val Glu Ser Asn Leu Asp Gln Ile 1355 1360 1365
- Glu Val Ala Lys Leu Asp Gly Thr Leu Arg Thr Thr Leu Leu Ala 1370 1375 1380
- Gly Asp Ile Glu His Pro Arg Ala Ile Ala Leu Asp Pro Arg Asp 1385 1390 1395
- Gly Ile Leu Phe Trp Thr Asp Trp Asp Ala Ser Leu Pro Arg Ile 1400 1405 1410

- Glu Ala Ala Ser Met Ser Gly Ala Gly Arg Arg Thr Val His Arg 1415 1420 1425
- Glu Thr Gly Ser Gly Gly Trp Pro Asn Gly Leu Thr Val Asp Tyr 1430 1435 1440
- Leu Glu Lys Arg Ile Leu Trp Ile Asp Ala Arg Ser Asp Ala Ile 1445 1450 1455
- Tyr Ser Ala Arg Tyr Asp Gly Ser Gly His Met Glu Val Leu Arg 1460 1465 1470
- Gly His Glu Phe Leu Ser His Pro Phe Ala Val Thr Leu Tyr Gly 1475 1480 1485
- Gly Glu Val Tyr Trp Thr Asp Trp Arg Thr Asn Thr Leu Ala Lys 1490 1495 1500
- Ala Asn Lys Trp Thr Gly His Asn Val Thr Val Val Gln Arg Thr 1505 1510 1515
- Asn Thr Gln Pro Phe Asp Leu Gln Val Tyr His Pro Ser Arg Gln 1520 1530
- Pro Met Ala Pro Asn Pro Cys Glu Ala Asn Gly Gly Gln Gly Pro 1535 1540 1545
- Cys Ser His Leu Cys Leu Ile Asn Tyr Asn Arg Thr Val Ser Cys 1550 1560
- Ala Cys Pro His Leu Met Lys Leu His Lys Asp Asn Thr Thr Cys 1565 1570 1575
- Tyr Glu Phe Lys Lys Phe Leu Leu Tyr Ala Arg Gln Met Glu Ile 1580 1585 1590
- Arg Gly Val Asp Leu Asp Ala Pro Tyr Tyr Asn Tyr Ile Ile Ser 1595 1600 1605
- Phe Thr Val Pro Asp Ile Asp Asn Val Thr Val Leu Asp Tyr Asp 1610 1615 1620
- Ala Arg Glu Gln Arg Val Tyr Trp Ser Asp Val Arg Thr Gln Ala 1625 1630 1635

Ile Lys Arg Ala Phe Ile Asn Gly Thr Gly Val Glu Thr Val Val 1640 1645 1650

- Ser Ala Asp Leu Pro Asn Ala His Gly Leu Ala Val Asp Trp Val 1655 1660 1665
- Ser Arg Asn Leu Phe Trp Thr Ser Tyr Asp Thr Asn Lys Lys Gln 1670 1675
- Ile Asn Val Ala Arg Leu Asp Gly Ser Phe Lys Asn Ala Val Val 1685 1690 1695
- Gln Gly Leu Glu Gln Pro His Gly Leu Val Val His Pro Leu Arg 1700 1705 1710
- Gly Lys Leu Tyr Trp Thr Asp Gly Asp Asn Ile Ser Met Ala Asn 1715 1720 1725
- Met Asp Gly Ser Asn Arg Thr Leu Leu Phe Ser Gly Gln Lys Gly 1730 1735 1740
- Pro Val Gly Leu Ala Ile Asp Phe Pro Glu Ser Lys Leu Tyr Trp 1745 1750 1755
- Ile Ser Ser Gly Asn His Thr Ile Asn Arg Cys Asn Leu Asp Gly 1760 1765 1770
- Ser Gly Leu Glu Val Ile Asp Ala Met Arg Ser Gln Leu Gly Lys 1775 1780 1785
- Ala Thr Ala Leu Ala Ile Met Gly Asp Lys Leu Trp Trp Ala Asp 1790 1795 1800
- Gln Val Ser Glu Lys Met Gly Thr Cys Ser Lys Ala Asp Gly Ser 1805 1810 1815
- Gly Ser Val Val Leu Arg Asn Ser Thr Thr Leu Val Met His Met 1820 1825 1830
- Lys Val Tyr Asp Glu Ser Ile Gln Leu Asp His Lys Gly Thr Asn 1835 1840 1845
- Pro Cys Ser Val Asn Asn Gly Asp Cys Ser Gln Leu Cys Leu Pro 1850 1855 1860

- Thr Ser Glu Thr Thr Arg Ser Cys Met Cys Thr Ala Gly Tyr Ser 1865 1870 1875
- Leu Arg Ser Gly Gln Gln Ala Cys Glu Gly Val Gly Ser Phe Leu 1880 1885 1890
- Leu Tyr Ser Val His Glu Gly Ile Arg Gly Ile Pro Leu Asp Pro 1895 1900 1905
- Asn Asp Lys Ser Asp Ala Leu Val Pro Val Ser Gly Thr Ser Leu 1910 1915 1920
- Ala Val Gly Ile Asp Phe His Ala Glu Asn Asp Thr Ile Tyr Trp 1925 1930 1935
- Val Asp Met Gly Leu Ser Thr Ile Ser Arg Ala Lys Arg Asp Gln 1940 1945 1950
- Thr Trp Arg Glu Asp Val Val Thr Asn Gly Ile Gly Arg Val Glu 1955 1960 1965
- Gly Ile Ala Val Asp Trp Ile Ala Gly Asn Ile Tyr Trp Thr Asp 1970 1975 1980
- Gln Gly Phe Asp Val Ile Glu Val Ala Arg Leu Asn Gly Ser Phe 1985 1990 1995
- Arg Tyr Val Val Ile Ser Gln Gly Leu Asp Lys Pro Arg Ala Ile 2000 2005 2010
- Thr Val His Pro Glu Lys Gly Tyr Leu Phe Trp Thr Glu Trp Gly 2015 2020 2025
- Gln Tyr Pro Arg Ile Glu Arg Ser Arg Leu Asp Gly Thr Glu Arg 2030 2035 2040
- Val Val Leu Val Asn Val Ser Ile Ser Trp Pro Asn Gly Ile Ser 2045 2050 2055
- Val Asp Tyr Gln Asp Gly Lys Leu Tyr Trp Cys Asp Ala Arg Thr 2060 2065 2065
- Asp Lys Ile Glu Arg Ile Asp Leu Glu Thr Gly Glu Asn Arg Glu 2075 2080 2085

- Val Val Leu Ser Ser Asn Asn Met Asp Met Phe Ser Val Ser Val 2090

 Phe Glu Asp Phe Ile Tyr Trp 2110

 Ser Asp Arg Thr His 2115

 Ser Ile Lys Arg Gly Ser Lys Asp Asn Ala Thr Asp 2115

 Leu Arg Thr Gly Ile Gly Val Gln Leu Lys Asp Ile Lys Val Phe 2135

 Asn Arg Asp Arg Gln Lys Gly Thr Asn Val Cys Ala Val Ala Asn 2150

 Asn Arg 2150

 Asn Arg Cly Cly Arg Cly Cly
 - Gly Gly Cys Gln Gln Leu Cys Leu Tyr Arg Gly Arg Gly Gln Arg 2165 2170 2175
 - Ala Cys Ala Cys Ala His Gly Met Leu Ala Glu Asp Gly Ala Ser 2180 2185 2190
 - Cys Arg Glu Tyr Ala Gly Tyr Leu Leu Tyr Ser Glu Arg Thr Ile 2195 2200 2205
 - Leu Lys Ser Ile His Leu Ser Asp Glu Arg Asn Leu Asn Ala Pro 2210 2215 2220
 - Val Gln Pro Phe Glu Asp Pro Glu His Met Lys Asn Val Ile Ala 2225 2230 2235
 - Leu Ala Phe Asp Tyr Arg Ala Gly Thr Ser Pro Gly Thr Pro Asn 2240 2245 2250
 - Arg lle Phe Phe Ser Asp Ile His Phe Gly Asn Ile Gln Gln Ile 2255 2260 2265
 - Asn Asp Asp Gly Ser Arg Arg Ile Thr Ile Val Glu Asn Val Gly 2270 2280
 - Ser Val Glu Gly Leu Ala Tyr His Arg Gly Trp Asp Thr Leu Tyr 2285 2290 2295
 - Trp Thr Ser Tyr Thr Thr Ser Thr Ile Thr Arg His Thr Val Asp
 2300 2305 2310

Gln Thr Arg Pro Gly Ala Phe Glu Arg Glu Thr Val Ile Thr Met 2315 2320 2325

- Ser Gly Asp Asp His Pro Arg Ala Phe Val Leu Asp Glu Cys Gln 2330 2340
- Asn Leu Met Phe Trp Thr Asn Trp Asn Glu Gln His Pro Ser Ile 2345 2350 2355
- Met Arg Ala Ala Leu Ser Gly Ala Asn Val Leu Thr Leu Ile Glu 2360 2365 2370
- Lys Asp Ile Arg Thr Pro Asn Gly Leu Ala Ile Asp His Arg Ala 2375 2380 2385
- Glu Lys Leu Tyr Phe Ser Asp Ala Thr Leu Asp Lys Ile Glu Arg 2390 2395 2400
- Cys Glu Tyr Asp Gly Ser His Arg Tyr Val Ile Leu Lys Ser Glu 2405 2410 2415
- Pro Val His Pro Phe Gly Leu Ala Val Tyr Gly Glu His Ile Phe 2420 2425 2430
- Trp Thr Asp Trp Val Arg Arg Ala Val Gln Arg Ala Asn Lys His 2435 2440 2445
- Val Gly Ser Asn Met Lys Leu Leu Arg Val Asp Ile Pro Gln Gln 2450 2455 2460
- Pro Met Gly Ile Ile Ala Val Ala Asn Asp Thr Asn Ser Cys Glu 2465 2470 2475
- Leu Ser Pro Cys Arg Ile Asn Asn Gly Gly Cys Gln Asp Leu Cys 2480 2485 2490
- Leu Leu Thr His Gln Gly His Val Asn Cys Ser Cys Arg Gly Gly 2495 2500 2505
- Arg Ile Leu Gln Asp Asp Leu Thr Cys Arg Ala Val Gly Gly Arg 2510 2515 2520
- Leu Val Pro Arg Gly Ser Tyr Pro Tyr Asp Val Pro Asp Tyr Ala 2525 2530 2535

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<213> H. sapiens

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Ala Cys Arg Asp Gln Ile Thr Cys Ile Ser Lys Gly Trp Arg Cys Asp 35 40 45

Gly Glu Arg Asp Cys Pro Asp Gly Ser Asp Glu Ala Pro Glu Ile Cys
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Pro Gln Ser Lys Ala Gln Arg Cys Gln Pro Asn Glu His Asn Cys Leu 70 75 80

Gly Thr Glu Leu Cys Val Pro Met Ser Arg Leu Cys Asn Gly Val Gln 85 90 95

Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln 100 105 110

Gly Asn Cys Ser Arg Leu Gly Cys Gln His His Cys Val Pro Thr Leu 115 120 125

Asp Gly Pro Thr Cys Tyr Cys Asn Ser Ser Phe Gln Leu Gln Ala Asp 130 135 140

Gly Lys Thr Cys Lys Asp Phe Asp Glu Cys Ser Val Tyr Gly Thr Cys 145 150 155 160

Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175

Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190 Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 195 200 205

- Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220
- Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 225 230 235 240
- Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln Leu 245 250 255
- Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 265 270
- Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile Asp 275 280 285
- Trp Leu Thr Gly Asn Phe Tyr Phe Val Asp Asp Ile Asp Asp Arg Ile 290 295 300
- Phe Val Cys Asn Arg Asn Gly Asp Thr Cys Val Thr Leu Leu Asp Leu 305 310 315
- Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335
- Val Phe Phe Thr Asp Tyr Gly Gln Ile Pro Lys Val Glu Arg Cys Asp 340 345 350
- Met Asp Gly Gln Asn Arg Thr Lys Leu Val Asp Ser Lys Ile Val Phe 355 360 365
- Pro His Gly Ile Thr Leu Asp Leu Val Ser Arg Leu Val Tyr Trp Ala 370 375 380
- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385 390 395 400
- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430

Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr 435 440 445

Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455 460

Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 465 470 475 480

Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 485 490 495

Asn Ser His Lys Ala Arg Thr Cys Arg Cys Arg Ser Gly Phe Ser Leu 500 505 510

Gly Ser Asp Gly Lys Ser Cys Lys Lys Pro Glu His Glu Leu Phe Leu 515 520 525

Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly 530 535 540

Ala Lys Val Pro Asp Glu His Met Ile Pro Ile Glu Asn Leu Met Asn 545 550 555 560

Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575

Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu 580 585 590

Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala 595 600 605

Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro Lys 610 615 620

Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640

Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Val Val Asp 645 650 655

Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro Lys 660 665 670

Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser His 675 680 685

- Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly Leu 690 695 700
- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720
- Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile Val 725 730 735
- Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly 740 745 750
- Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg Leu 755 760 765
- Glu Arg Gly Val Gly Gly Ala Pro Pro Thr Val Thr Leu Leu Arg Ser 770 775 780
- Glu Arg Pro Pro Ile Phe Glu Ile Arg Met Tyr Asp Ala Gln Gln 785 790 795 800
- Gln Val Gly Thr Asn Lys Cys Arg Val Asn Asn Gly Gly Cys Ser Ser 805 810
- Leu Cys Leu Ala Thr Pro Gly Ser Arg Gln Cys Ala Cys Ala Glu Asp 820 825 830
- Gln Val Leu Asp Ala Asp Gly Val Thr Cys Leu Ala Asn Pro Ser Tyr 835 840 845
- Val Pro Pro Pro Gln Cys Gln Pro Gly Glu Phe Ala Cys Ala Asn Ser 850 855 860
- Arg Cys Ile Gln Glu Arg Trp Lys Cys Asp Gly Asp Asn Asp Cys Leu 865 870 875 880
- Asp Asn Ser Asp Glu Ala Pro Ala Leu Cys His Gln His Thr Cys Pro 885 890 895
- Ser Asp Arg Phe Lys Cys Glu Asn Asn Arg Cys Ile Pro Asn Arg Trp 900 905 910

Leu Cys Asp Gly Asp Asn Asp Cys Gly Asn Ser Glu Asp Glu Ser Asn 915 920 925

- Ala Thr Cys Ser Ala Arg Thr Cys Pro Pro Asn Gln Phe Ser Cys Ala 930 935 940
- Ser Gly Arg Cys Ile Pro Ile Ser Trp Thr Cys Asp Leu Asp Asp Asp 945 950 955 960
- Cys Gly Asp Arg Ser Asp Glu Ser Ala Ser Cys Ala Tyr Pro Thr Cys 965 970 975
- Phe Pro Leu Thr Gln Phe Thr Cys Asn Asn Gly Arg Cys Ile Asn Ile 980 985 990
- Asn Trp Arg Cys Asp Asn Asp Asn Asp Cys Gly Asp Asn Ser Asp Glu 995 1000 1005
- Ala Gly Cys Ser His Ser Cys Ser Ser Thr Gln Phe Lys Cys Asn 1010 1015 1020
- Ser Gly Arg Cys Ile Pro Glu His Trp Thr Cys Asp Gly Asp Asn 1025 1030 1035
- Asp Cys Gly Asp Tyr Ser Asp Glu Thr His Ala Asn Cys Thr Asn 1040 1045 1050
- Gln Ala Thr Arg Pro Pro Gly Gly Cys His Thr Asp Glu Phe Gln 1055 1060 1065
- Cys Arg Leu Asp Gly Leu Cys Ile Pro Leu Arg Trp Arg Cys Asp 1070 1075 1080
- Gly Asp Thr Asp Cys Met Asp Ser Ser Asp Glu Lys Ser Cys Glu 1085 1090 1095
- Gly Val Thr His Val Cys Asp Pro Ser Val Lys Phe Gly Cys Lys 1100 1105 1110
- Asp Ser Ala Arg Cys Ile Ser Lys Ala Trp Val Cys Asp Gly Asp 1115 1120 1125
- Asn Asp Cys Glu Asp Asn Ser Asp Glu Glu Asn Cys Glu Ser Leu 1130 1135 1140

Ala Cys Arg Pro Pro Ser His Pro Cys Ala Asn Asn Thr Ser Val 1145 1150 1155

- Cys Leu Pro Pro Asp Lys Leu Cys Asp Gly Asn Asp Asp Cys Gly 1160 1165 1170
- Asp Gly Ser Asp Glu Gly Glu Leu Cys Asp Gln Cys Ser Leu Asn 1175 1180 1185
- Asn Gly Gly Cys Ser His Asn Cys Ser Val Ala Pro Gly Glu Gly 1190 1195 1200
- Ile Val Cys Ser Cys Pro Leu Gly Met Glu Leu Gly Pro Asp Asn 1205 1210 1215
- His Thr Cys Gln Ile Gln Ser Tyr Cys Ala Lys His Leu Lys Cys 1220 1225 1230
- Ser Gln Lys Cys Asp Gln Asn Lys Phe Ser Val Lys Cys Ser Cys 1235 1240 1245
- Tyr Glu Gly Trp Val Leu Glu Pro Asp Gly Glu Ser Cys Arg Ser 1250 1255 1260
- Leu Asp Pro Phe Lys Pro Phe Ile Ile Phe Ser Asn Arg His Glu 1265 1270 1275
- Ile Arg Arg Ile Asp Leu His Lys Gly Asp Tyr Ser Val Leu Val 1280 1285 1290
- Pro Gly Leu Arg Asn Thr Ile Ala Leu Asp Phe His Leu Ser Gln 1295 1300 1305
- Ser Ala Leu Tyr Trp Thr Asp Val Val Glu Asp Lys Ile Tyr Arg 1310 1315 1320
- Gly Lys Leu Leu Asp Asn Gly Ala Leu Thr Ser Phe Glu Val Val 1325 1330 1335
- Ile Gln Tyr Gly Leu Ala Thr Pro Glu Gly Leu Ala Val Asp Trp 1340 1345
- Ile Ala Gly Asn Ile Tyr Trp Val Glu Ser Asn Leu Asp Gln Ile 1355 1360 1365

Glu Val Ala Lys Leu Asp Gly Thr Leu Arg Thr Thr Leu Leu Ala 1370 1375 1380

- Gly Asp Ile Glu His Pro Arg Ala Ile Ala Leu Asp Pro Arg Asp 1385 1390 1395
- Gly Ile Leu Phe Trp Thr Asp Trp Asp Ala Ser Leu Pro Arg Ile 1400 1405 1410
- Glu Ala Ala Ser Met Ser Gly Ala Gly Arg Arg Thr Val His Arg 1415 1420 1425
- Glu Thr Gly Ser Gly Gly Trp Pro Asn Gly Leu Thr Val Asp Tyr 1430 1435 1440
- Leu Glu Lys Arg Ile Leu Trp Ile Asp Ala Arg Ser Asp Ala Ile 1445 1450 1455
- Tyr Ser Ala Arg Tyr Asp Gly Ser Gly His Met Glu Val Leu Arg 1460 1465 1470
- Gly His Glu Phe Leu Ser His Pro Phe Ala Val Thr Leu Tyr Gly 1475 1480 1485
- Gly Glu Val Tyr Trp Thr Asp Trp Arg Thr Asn Thr Leu Ala Lys 1490 1495 1500
- Ala Asn Lys Trp Thr Gly His Asn Val Thr Val Val Gln Arg Thr
 1505 1510 1515
- Asn Thr Gln Pro Phe Asp Leu Gln Val Tyr His Pro Ser Arg Gln 1520 1525 1530
- Pro Met Ala Pro Asn Pro Cys Glu Ala Asn Gly Gly Gln Gly Pro 1535 1540 1545
- Cys Ser His Leu Cys Leu Ile Asn Tyr Asn Arg Thr Val Ser Cys 1550 1560
- Ala Cys Pro His Leu Met Lys Leu His Lys Asp Asn Thr Thr Cys 1565 1570 1575
- Tyr Glu Phe Lys Lys Phe Leu Leu Tyr Ala Arg Gln Met Glu Ile 1580 1585 1590

- Arg Gly Val Asp Leu Asp Ala Pro Tyr Tyr Asn Tyr Ile Ile Ser 1595 1600 1605
- Phe Thr Val Pro Asp Ile Asp Asn Val Thr Val Leu Asp Tyr Asp 1610 1620
- Ala Arg Glu Gln Arg Val Tyr Trp Ser Asp Val Arg Thr Gln Ala 1625 1630 1635
- Ile Lys Arg Ala Phe Ile Asn Gly Thr Gly Val Glu Thr Val Val 1640 1645 1650
- Ser Ala Asp Leu Pro Asn Ala His Gly Leu Ala Val Asp Trp Val 1655 1660 1665
- Ser Arg Asn Leu Phe Trp Thr Ser Tyr Asp Thr Asn Lys Lys Gln 1670 1680
- Ile Asn Val Ala Arg Leu Asp Gly Ser Phe Lys Asn Ala Val Val 1685 1690 1695
- Gln Gly Leu Glu Gln Pro His Gly Leu Val Val His Pro Leu Arg 1700 1705 1710
- Gly Lys Leu Tyr Trp Thr Asp Gly Asp Asn Ile Ser Met Ala Asn 1715 1720 1725
- Met Asp Gly Ser Asn Arg Thr Leu Leu Phe Ser Gly Gln Lys Gly 1730 1740
- Pro Val Gly Leu Ala Ile Asp Phe Pro Glu Ser Lys Leu Tyr Trp 1745 1750 1755
- Ile Ser Ser Gly Asn His Thr Ile Asn Arg Cys Asn Leu Asp Gly 1760 1765 1770
- Ser Gly Leu Glu Val Ile Asp Ala Met Arg Ser Gln Leu Gly Lys 1775 1780 1785
- Ala Thr Ala Leu Ala Ile Met Gly Asp Lys Leu Trp Trp Ala Asp 1790 1795 1800
- Gln Val Ser Glu Lys Met Gly Thr Cys Ser Lys Ala Asp Gly Ser 1805 1810 1815

- Gly Ser Val Val Leu Arg Asn Ser Thr Thr Leu Val Met His Met 1820 1825 1830
- Lys Val Tyr Asp Glu Ser Ile Gln Leu Asp His Lys Gly Thr Asn 1835 1840 1845
- Pro Cys Ser Val Asn Asn Gly Asp Cys Ser Gln Leu Cys Leu Pro 1850 1855 1860
- Thr Ser Glu Thr Thr Arg Ser Cys Met Cys Thr Ala Gly Tyr Ser 1865 1870 1875
- Leu Arg Ser Gly Gln Gln Ala Cys Glu Gly Val Gly Ser Phe Leu 1880 1885 1890
- Leu Tyr Ser Val His Glu Gly Ile Arg Gly Ile Pro Leu Asp Pro 1895 1900 1905
- Asn Asp Lys Ser Asp Ala Leu Val Pro Val Ser Gly Thr Ser Leu 1910 1915 1920
- Ala Val Gly Ile Asp Phe His Ala Glu Asn Asp Thr Ile Tyr Trp 1925 1930 1935
- Val Asp Met Gly Leu Ser Thr Ile Ser Arg Ala Lys Arg Asp Gln 1940 1945 1950
- Thr Trp Arg Glu Asp Val Val Thr Asn Gly Ile Gly Arg Val Glu 1955 1960 1965
- Gly Ile Ala Val Asp Trp Ile Ala Gly Asn Ile Tyr Trp Thr Asp 1970 1975 1980
- Gln Gly Phe Asp Val Ile Glu Val Ala Arg Leu Asn Gly Ser Phe 1985 1990 1995
- Arg Tyr Val Val Ile Ser Gln Gly Leu Asp Lys Pro Arg Ala Ile 2000 2005 2010
- Thr Val His Pro Glu Lys Gly Tyr Leu Phe Trp Thr Glu Trp Gly 2015 2020 2025
- Gln Tyr Pro Arg Ile Glu Arg Ser Arg Leu Asp Gly Thr Glu Arg 2030 2035 2040

- Val Val Leu Val Asn Val Ser Ile Ser Trp Pro Asn Gly Ile Ser 2045 2050 2055
- Val Asp Tyr Gln Asp Gly Lys Leu Tyr Trp Cys Asp Ala Arg Thr 2060 2065 2070
- Asp Lys Ile Glu Arg Ile Asp Leu Glu Thr Gly Glu Asn Arg Glu 2075 2080 2085
- Val Val Leu Ser Ser Asn Asn Met Asp Met Phe Ser Val Ser Val 2090 2095 2100
- Phe Glu Asp Phe Ile Tyr Trp Ser Asp Arg Thr His Ala Asn Gly 2105 2110
- Ser Ile Lys Arg Gly Ser Lys Asp Asn Ala Thr Asp Ser Val Pro 2120 2125 2130
- Leu Arg Thr Gly Ile Gly Val Gln Leu Lys Asp Ile Lys Val Phe 2135 2140 2145
- Asn Arg Asp Arg Gln Lys Gly Thr Asn Val Cys Ala Val Ala Asn 2150 2155 2160
- Gly Gly Cys Gln Gln Leu Cys Leu Tyr Arg Gly Arg Gly Gln Arg 2165 2170 2175
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- Cys Arg Glu Tyr Ala Gly Tyr Leu Leu Tyr Ser Glu Arg Thr Ile 2195 2200 2205
- Leu Lys Ser Ile His Leu Ser Asp Glu Arg Asn Leu Asn Ala Pro 2210 2215 2220
- Val Gln Pro Phe Glu Asp Pro Glu His Met Lys Asn Val Ile Ala 2225 2230 2235
- Leu Ala Phe Asp Tyr Arg Ala Gly Thr Ser Pro Gly Thr Pro Asn 2240 2245 2250
- Arg Ile Phe Phe Ser Asp Ile His Phe Gly Asn Ile Gln Gln Ile 2255 2260 2265

Asn Asp Asp Gly Ser Arg Arg Ile Thr Ile Val Glu Asn Val Gly 2270 2275 2280

- Ser Val Glu Gly Leu Ala Tyr His Arg Gly Trp Asp Thr Leu Tyr 2285 2290 2295
- Trp Thr Ser Tyr Thr Thr Ser Thr Ile Thr Arg His Thr Val Asp 2300 2305 2310
- Gln Thr Arg Pro Gly Ala Phe Glu Arg Glu Thr Val Ile Thr Met 2315 2320 2325
- Ser Gly Asp Asp His Pro Arg Ala Phe Val Leu Asp Glu Cys Gln 2330 2340
- Asn Leu Met Phe Trp Thr Asn Trp Asn Glu Gln His Pro Ser Ile 2345 2350 2355
- Met Arg Ala Ala Leu Ser Gly Ala Asn Val Leu Thr Leu Ile Glu 2360 2365 2370
- Lys Asp Ile Arg Thr Pro Asn Gly Leu Ala Ile Asp His Arg Ala 2375 2380 2385
- Glu Lys Leu Tyr Phe Ser Asp Ala Thr Leu Asp Lys Ile Glu Arg 2390 2395 2400
- Cys Glu Tyr Asp Gly Ser His Arg Tyr Val Ile Leu Lys Ser Glu 2405 2410 2415
- Pro Val His Pro Phe Gly Leu Ala Val Tyr Gly Glu His Ile Phe 2420 2425 2430
- Trp Thr Asp Trp Val Arg Arg Ala Val Gln Arg Ala Asn Lys His 2435 2440 2445
- Val Gly Ser Asn Met Lys Leu Leu Arg Val Asp Ile Pro Gln Gln 2450 2455 2460
- Pro Met Gly Ile Ile Ala Val Ala Asn Asp Thr Asn Ser Cys Glu 2465 2470 2475
- Leu Ser Pro Cys Arg Ile Asn Asn Gly Gly Cys Gln Asp Leu Cys 2480 2485 2490

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Ala Cys Arg Asp Gln Ile Thr Cys Ile Ser Lys Gly Trp Arg Cys Asp 35 40 45

Gly Glu Arg Asp Cys Pro Asp Gly Ser Asp Glu Ala Pro Glu Ile Cys
50 55 60

Pro Gln Ser Lys Ala Gln Arg Cys Gln Pro Asn Glu His Asn Cys Leu 65 70 75 80

Gly Thr Glu Leu Cys Val Pro Met Ser Arg Leu Cys Asn Gly Val Gln 85 90 95

Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln
100 105 110

Gly Asn Cys Ser Arg Leu Gly Cys Gln His His Cys Val Pro Thr Leu 115 120 125

Asp Gly Pro Thr Cys Tyr Cys Asn Ser Ser Phe Gln Leu Gln Ala Asp 130 135 140

Gly Lys Thr Cys Lys Asp Phe Asp Glu Cys Ser Val Tyr Gly Thr Cys 145 150 155 160

Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175

Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190

- Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 195 200 205
- Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220
- Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 225 230 235 240
- Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln Leu 245 250 255
- Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 265 270
- Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile Asp 275 280 285
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- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385 390 395 400
- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410 415
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430

- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr 435 440 445
- Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455 460
- Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 465 470 475 480
- Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 485 490 495
- Asn Ser His Lys Ala Arg Thr Cys Arg Cys Arg Ser Gly Phe Ser Leu 500 505 510
- Gly Ser Asp Gly Lys Ser Cys Lys Lys Pro Glu His Glu Leu Phe Leu 515 520 525
- Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly 530 535
- Ala Lys Val Pro Asp Glu His Met Ile Pro Ile Glu Asn Leu Met Asn 545 550 550
- Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575
- Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu 580 585 590
- Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala 595 600 605
- Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro Lys 610 620
- Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640
- Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Val Val Asp
 645 650 655
- Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro Lys 660 665 670

- Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser His 675 680 685
- Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly Leu 690 695 700
- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720
- Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile Val 725 730 735
- Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly
 740 745 750
- Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg Leu
 755 760 765
- Glu Arg Gly Val Gly Gly Ala Pro Pro Thr Val Thr Leu Leu Arg Ser 770 775 780
- Glu Arg Pro Pro Ile Phe Glu Ile Arg Met Tyr Asp Ala Gln Gln 785 790 795 800
- Gln Val Gly Thr Asn Lys Cys Arg Val Asn Asn Gly Gly Cys Ser Ser 805 810 815
- Leu Cys Leu Ala Thr Pro Gly Ser Arg Gln Cys Ala Cys Ala Glu Asp 820 825 830
- Gln Val Leu Asp Ala Asp Gly Val Thr Cys Leu Ala Asn Pro Ser Tyr 835 840 845
- Val Pro Pro Pro Gln Cys Gln Pro Gly Glu Phe Ala Cys Ala Asn Ser 850 855 860
- Arg Cys Ile Gln Glu Arg Trp Lys Cys Asp Gly Asp Asn Asp Cys Leu 865 870 875 880
- Asp Asn Ser Asp Glu Ala Pro Ala Leu Cys His Gln His Thr Cys Pro 885 890 895
- Ser Asp Arg Phe Lys Cys Glu Asn Asn Arg Cys Ile Pro Asn Arg Trp 900 905 910

- Leu Cys Asp Gly Asp Asn Asp Cys Gly Asn Ser Glu Asp Glu Ser Asn 915 920 925
- Ala Thr Cys Ser Ala Arg Thr Cys Pro Pro Asn Gln Phe Ser Cys Ala 930 935 940
- Ser Gly Arg Cys Ile Pro Ile Ser Trp Thr Cys Asp Leu Asp Asp Asp 945 950 955 960
- Cys Gly Asp Arg Ser Asp Glu Ser Ala Ser Cys Ala Tyr Pro Thr Cys 965 970 975
- Phe Pro Leu Thr Gln Phe Thr Cys Asn Asn Gly Arg Cys Ile Asn Ile 980 985 990
- Asn Trp Arg Cys Asp Asn Asp Asn Asp Cys Gly Asp Asn Ser Asp Glu 995 1000 1005
- Ala Gly Cys Ser His Ser Cys Ser Ser Thr Gln Phe Lys Cys Asn 1010 1015 1020
- Ser Gly Arg Cys Ile Pro Glu His Trp Thr Cys Asp Gly Asp Asn 1025 1030 1035
- Asp Cys Gly Asp Tyr Ser Asp Glu Thr His Ala Asn Cys Thr Asn 1040 1045 1050
- Gln Ala Thr Arg Pro Pro Gly Gly Cys His Thr Asp Glu Phe Gln 1055 1060 1065
- Cys Arg Leu Asp Gly Leu Cys Ile Pro Leu Arg Trp Arg Cys Asp 1070 1075 1080
- Gly Asp Thr Asp Cys Met Asp Ser Ser Asp Glu Lys Ser Cys Glu 1085 1090 1095
- Gly Val Thr His Val Cys Asp Pro Ser Val Lys Phe Gly Cys Lys 1100 1105 1110
- Asp Ser Ala Arg Cys Ile Ser Lys Ala Trp Val Cys Asp Gly Asp 1115 1120 1125
- Asn Asp Cys Glu Asp Asn Ser Asp Glu Glu Asn Cys Glu Ser Leu 1130 1135 1140

| Ala | Cys 1145 | _ | Pro | Pro | Ser | His 1150 | Pro | Cys | Ala | Asn | Asn 1155 | | Ser | Val |
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| Cys | Leu 1160 | | Pro | Asp | Lys | Leu 1165 | | Asp | Gly | Asn | Asp 1170 | | Cys | Gly |
| Asp | Gly 1175 | Ser | Asp | Glu | Gly | Glu 1180 | Leu | Cys | Asp | Gln | Cys 1185 | Ser | Leu | Asn |
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| Ile | Val 1205 | Cys | Ser | Cys | Pro | Leu 1210 | Gly | Met | Glu | Leu | Gly 1215 | Pro | Asp | Asn |
| His | Thr 1220 | _ | Gln | Ile | Gln | Ser 1225 | Tyr | Cys | Ala | Lys | His 1230 | Leu | Lys | Cys |
| Ser | Gln 1235 | Lys | Cys | Asp | Gln | Asn 1240 | Lys | Phe | Ser | Val | Lys 1245 | Сув | Ser | Cys |
| Tyr | Glu 1250 | Gly | Trp | Val | Leu | Glu 1255 | Pro | Asp | Gly | Glu | Ser 1260 | Cys | Arg | Ser |
| Leu | Asp 1265 | Pro | Phe | Lys | Pro | Phe 1270 | Ile | Ile | Phe | Ser | Asn 1275 | Arg | His | Glu |
| Ile | Arg 1280 | Arg | Ile | Asp | Leu | His 1285 | Lys | Gly | Asp | туr | Ser 1290 | Val | Leu | Val |
| | Gly 1295 | | _ | | | Ile 1300 | | | | | | | Ser | Gln |
| Ser | Ala 1310 | Leu | Tyr | Trp | Thr | Asp 1315 | Val | Val | Glu | Asp | Lys 1320 | Ile | Tyr | Arg |
| Gly | Lys 1325 | Leu | Leu | Asp | Asn | Gly 1330 | Ala | Leu | Thr | Ser | Phe 1335 | Glu | Val | Val |
| Ile | Gln 1340 | Tyr | Gly | Leu | Ala | Thr 1345 | Pro | Glu | Gly | Leu | Ala 1350 | Val | Asp | Trp |
| Ile | Ala 1355 | Gly | Asn | Ile | Tyr | Trp 1360 | Val | Glu | Ser | Asn | Leu 1365 | Asp | Gln | Ile |

Glu Val Ala Lys Leu Asp Gly Thr Leu Arg Thr Thr Leu Leu Ala 1370 1375 1380

- Gly Asp Ile Glu His Pro Arg Ala Ile Ala Leu Asp Pro Arg Asp 1385 1390 1395
- Gly Ile Leu Phe Trp Thr Asp Trp Asp Ala Ser Leu Pro Arg Ile 1400 1405 1410
- Glu Ala Ala Ser Met Ser Gly Ala Gly Arg Arg Thr Val His Arg 1415 1420 1425
- Glu Thr Gly Ser Gly Gly Trp Pro Asn Gly Leu Thr Val Asp Tyr 1430 1435 1440
- Leu Glu Lys Arg Ile Leu Trp Ile Asp Ala Arg Ser Asp Ala Ile 1445 1450 1455
- Tyr Ser Ala Arg Tyr Asp Gly Ser Gly His Met Glu Val Leu Arg 1460 1465 1470
- Gly His Glu Phe Leu Ser His Pro Phe Ala Val Thr Leu Tyr Gly 1475 1480 1485
- Gly Glu Val Tyr Trp Thr Asp Trp Arg Thr Asn Thr Leu Ala Lys 1490 1495 1500
- Ala Asn Lys Trp Thr Gly His Asn Val Thr Val Val Gln Arg Thr 1505 1510 1515
- Asn Thr Gln Pro Phe Asp Leu Gln Val Tyr His Pro Ser Arg Gln 1520 1525 1530
- Pro Met Ala Pro Asn Pro Cys Glu Ala Asn Gly Gly Gln Gly Pro 1535 1540 1545
- Cys Ser His Leu Cys Leu Ile Asn Tyr Asn Arg Thr Val Ser Cys 1550 1560
- Ala Cys Pro His Leu Met Lys Leu His Lys Asp Asn Thr Thr Cys 1565 1570 1575
- Tyr Glu Phe Lys Lys Phe Leu Leu Tyr Ala Arg Gln Met Glu Ile 1580 1585 1590

Arg Gly Val Asp Leu Asp Ala Pro Tyr Tyr Asn Tyr Ile Ile Ser 1595 1600 Phe Thr Val Pro Asp Ile Asp Asn Val Thr Val Leu Asp Tyr Asp 1615 Ala Arg Glu Gln Arg Val Tyr Trp Ser Asp Val Arg Thr Gln Ala Ile Lys Arg Ala Phe Ile Asn Gly Thr Gly Val Glu Thr Val Val 1645 Ser Ala Asp Leu Pro Asn Ala His Gly Leu Ala Val Asp Trp Val 1660 Ser Arg Asn Leu Phe Trp Thr Ser Tyr Asp Thr Asn Lys Lys Gln 1675 Ile Asn Val Ala Arg Leu Asp Gly Ser Phe Lys Asn Ala Val Val 1690 Gln Gly Leu Glu Gln Pro His Gly Leu Val Val His Pro Leu Arg 1705 Gly Lys Leu Tyr Trp Thr Asp Gly Asp Asn Ile Ser Met Ala Asn 1720 Met Asp Gly Ser Asn Arg Thr Leu Leu Phe Ser Gly Gln Lys Gly 1735

Ser Gly Leu Glu Val Ile Asp Ala Met Arg Ser Gln Leu Gly Lys 1775 1780 1785

Pro Val Gly Leu Ala Ile Asp Phe Pro Glu Ser Lys Leu Tyr Trp

Ile Ser Ser Gly Asn His Thr Ile Asn Arg Cys Asn Leu Asp Gly

1750

1765

- Ala Thr Ala Leu Ala Ile Met Gly Asp Lys Leu Trp Trp Ala Asp 1790 1795 1800
- Gln Val Ser Glu Lys Met Gly Thr Cys Ser Lys Ala Asp Gly Ser 1805 1810 1815

- Gly Ser Val Val Leu Arg Asn Ser Thr Thr Leu Val Met His Met 1820 1825 1830
- Lys Val Tyr Asp Glu Ser Ile Gln Leu Asp His Lys Gly Thr Asn 1835 1840 1845
- Pro Cys Ser Val Asn Asn Gly Asp Cys Ser Gln Leu Cys Leu Pro 1850 1860
- Thr Ser Glu Thr Thr Arg Ser Cys Met Cys Thr Ala Gly Tyr Ser 1865 1870 1875
- Leu Arg Ser Gly Gln Gln Ala Cys Glu Gly Val Gly Ser Phe Leu 1880 1885 1890
- Leu Tyr Ser Val His Glu Gly Ile Arg Gly Ile Pro Leu Asp Pro 1895 1900 1905
- Asn Asp Lys Ser Asp Ala Leu Val Pro Val Ser Gly Thr Ser Leu 1910 1915 1920
- Ala Val Gly Ile Asp Phe His Ala Glu Asn Asp Thr Ile Tyr Trp 1925 1930 1935
- Val Asp Met Gly Leu Ser Thr Ile Ser Arg Ala Lys Arg Asp Gln 1940 1945 1950
- Thr Trp Arg Glu Asp Val Val Thr Asn Gly Ile Gly Arg Val Glu 1955 1960 1965
- Gly Ile Ala Val Asp Trp Ile Ala Gly Asn Ile Tyr Trp Thr Asp 1970 1975 1980
- Gln Gly Phe Asp Val Ile Glu Val Ala Arg Leu Asn Gly Ser Phe 1985 1990 1995
- Arg Tyr Val Val Ile Ser Gln Gly Leu Asp Lys Pro Arg Ala Ile 2000 2005 2010
- Thr Val His Pro Glu Lys Gly Tyr Leu Phe Trp Thr Glu Trp Gly 2015 2025
- Gln Tyr Pro Arg Ile Glu Arg Ser Arg Leu Asp Gly Thr Glu Arg 2030 2035 2040

| Val | Val 2045 | Leu | Val | Asn | | Ser 2050 | Ile | Ser | Trp | Pro | Asn 2055 | Gly | Ile | Ser |
|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Val | Asp 2060 | Tyr | Gln | Asp | Gly | Lys 2065 | Leu | Tyr | Trp | Cys | Asp 2070 | Ala | Arg | Thr |
| Asp | Lys 2075 | | Glu | Arg | | Asp 2080 | | Glu | Thr | Gly | Glu 2085 | Asn | Arg | Glu |
| Val | Val 2090 | | Ser | Ser | | Asn 2095 | | Asp | Met | Phe | Ser 2100 | Val | Ser | Val |
| Phe | Glu 2105 | | Phe | Ile | Tyr | Trp 2110 | | Asp | Arg | Thr | His 2115 | Ala | Asn | Gly |
| Ser | Ile 2120 | _ | Arg | Gly | Ser | Lys 2125 | | Asn | Ala | Thr | Asp 2130 | | Val | Pro |
| Leu | Arg 2135 | | Gly | Ile | | Val 2140 | | Leu | Lys | Asp | Ile 2145 | Lys | Val | Phe |
| Asn | Arg 2150 | _ | Arg | Gln | | Gly 2155 | | Asn | Val | Cys | Ala 2160 | | Ala | Asn |
| Gly | Gly 2165 | _ | Gln | Gln | Leu | Cys 2170 | | Tyr | Arg | Gly | Arg 2175 | Gly | Gln | Arg |
| Ala | Cys 2180 | | Cys | Ala | His | Gly 2185 | | Leu | Ala | Glu | Asp 2190 | | Ala | Ser |
| Cys | Arg 2195 | | | Ala | | 2200 | | Leu | Tyr | Ser | Glu 2205 | Arg | Thr | Ile |
| Leu | Lys 2210 | | Ile | His | Leu | Ser 2215 | | Glu | Arg | Asn | Leu 2220 | | Ala | Pro |
| Val | Gln | Pro | Phe | Glu | Asp | Pro | Glu | His | Met | Lys | Asn | Val | Ile | Ala |
| | 2225 | | | | | 2230 | | | | | 2235 | | | |
| Leu | Ala 2240 | | Asp | Tyr | Arg | Ala 2245 | Gly | Thr | Ser | Pro | Gly 2250 | Thr | Pro | Asn |
| Arg | Ile 2255 | | Phe | Ser | Asp | Ile 2260 | His | Phe | Gly | Asn | Ile 2265 | Gln | Gln | Ile |

- Asn Asp Asp Gly Ser Arg Arg Ile Thr Ile Val Glu Asn Val Gly 2270 2275 2280
- Ser Val Glu Gly Leu Ala Tyr His Arg Gly Trp Asp Thr Leu Tyr 2285 2290 2295
- Trp Thr Ser Tyr Thr Thr Ser Thr Ile Thr Arg His Thr Val Asp 2300 2305 2310
- Gln Thr Arg Pro Gly Ala Phe Glu Arg Glu Thr Val Ile Thr Met 2315 2320 2325
- Ser Gly Asp Asp His Pro Arg Ala Phe Val Leu Asp Glu Cys Gln 2330 2340
- Asn Leu Met Phe Trp Thr Asn Trp Asn Glu Gln His Pro Ser Ile 2345 2350 2355
- Met Arg Ala Ala Leu Ser Gly Ala Asn Val Leu Thr Leu Ile Glu 2360 2365 2370
- Lys Asp Ile Arg Thr Pro Asn Gly Leu Ala Ile Asp His Arg Ala 2375 2380 2385
- Glu Lys Leu Tyr Phe Ser Asp Ala Thr Leu Asp Lys Ile Glu Arg 2390 2395 2400
- Cys Glu Tyr Asp Gly Ser His Arg Tyr Val Ile Leu Lys Ser Glu 2405 2410 2415
- Pro Val His Pro Phe Gly Leu Ala Val Tyr Gly Glu His Ile Phe 2420 2425 2430
- Trp Thr Asp Trp Val Arg Arg Ala Val Gln Arg Ala Asn Lys His 2435 2440 2445
- Val Gly Ser Asn Met Lys Leu Leu Arg Val Asp Ile Pro Gln Gln 2450 2460
- Pro Met Gly Ile Ile Ala Val Ala Asn Asp Thr Asn Ser Cys Glu 2465 2470 2475
- Leu Ser Pro Cys Arg Ile Asn Asn Gly Gly Cys Gln Asp Leu Cys 2480 2485 2490

Leu Leu Thr His Gln Gly His Val Asn Cys Ser Cys Arg Gly Gly Arg Ile Leu Gln Asp Asp Leu Thr Cys Arg Ala Val Asn Ser Ser Cys Arg Ala Gln Asp Glu Phe Glu Cys Ala Asn Gly Glu Cys Ile Asn Phe Ser Leu Thr Cys Asp Gly Val Pro His Cys Lys Asp Lys Ser Asp Glu Lys Pro Ser Tyr Cys Asn Ser Arg Arg Cys Lys Lys Thr Phe Arg Gln Cys Ser Asn Gly Arg Cys Val Ser Asn Met Leu Trp Cys Asn Gly Ala Asp Asp Cys Gly Asp Gly Ser Asp Glu Ile Pro Cys Asn Lys Thr Ala Cys Gly Val Gly Glu Phe Arg Cys Arg Asp Gly Thr Cys Ile Gly Asn Ser Ser Arg Cys Asn Gln Phe Val Asp Cys Glu Asp Ala Ser Asp Glu Met Asn Cys Ser Ala Thr Asp Cys Ser Ser Tyr Phe Arg Leu Gly Val Lys Gly Val Leu Phe Gln Pro Cys Glu Arg Thr Ser Leu Cys Tyr Ala Pro Ser Trp Val Cys Asp Gly Ala Asn Asp Cys Gly Asp Tyr Ser Asp Glu Arg Asp Cys Pro Gly Val Lys Arg Pro Arg Cys Pro Leu Asn Tyr Phe Ala Cys Pro Ser Gly Arg Cys Ile Pro Met Ser Trp Thr Cys Asp Lys Glu

(

- Asp Asp Cys Glu His Gly Glu Asp Glu Thr His Cys Asn Lys Phe 2720 2725 2730
- Cys Ser Glu Ala Gln Phe Glu Cys Gln Asn His Arg Cys Ile Ser 2735 2740 2745
- Lys Gln Trp Leu Cys Asp Gly Ser Asp Asp Cys Gly Asp Gly Ser 2750 2755 2760
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Leu Ile Gly Arg Ile Gly Met Asp Gly Ser Ser Arg Ser Val Ile 3170 3175 3180

- Val Asp Thr Lys Ile Thr Trp Pro Asn Gly Leu Thr Leu Asp Tyr 3185 3190 3195
- Val Thr Glu Arg Ile Tyr Trp Ala Asp Ala Arg Glu Asp Tyr Ile 3200 3205 3210
- Glu Phe Ala Ser Leu Asp Gly Ser Asn Arg His Val Val Leu Ser 3215 3220 3225
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- Arg Pro Met Asp Leu His Val Phe His Ala Leu Arg Gln Pro Asp 3275 3280 3285
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- Gln Cys Lys Ser Gly His Cys Ile Pro Leu Arg Trp Arg Cys Asp 3620 3625 3630
- Ala Asp Ala Asp Cys Met Asp Gly Ser Asp Glu Glu Ala Cys Gly 3635 3640 3645
- Thr Gly Val Arg Thr Cys Pro Leu Asp Glu Phe Gln Cys Asn Asn 3650 3655 3660
- Thr Leu Cys Lys Pro Leu Ala Trp Lys Cys Asp Gly Glu Asp Asp 3665 3670 3675
- Cys Gly Asp Asn Ser Asp Glu Asn Pro Glu Glu Cys Ala Arg Phe 3680 3685 3690
- Val Cys Pro Pro Asn Arg Pro Phe Arg Cys Lys Asn Asp Arg Val 3695 3700 3705
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- Thr His Cys Lys Asp Lys Lys Glu Phe Leu Cys Arg Asn Gln Arg 3740 3745 3750
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- His Thr Val Pro Gly Gln Pro Gly Cys Gln Asp Ile Asn Glu Cys 3815 3820 3825
- Leu Arg Phe Gly Thr Cys Ser Gln Leu Cys Asn Asn Thr Lys Gly 3830 3840

- Gly His Leu Cys Ser Cys Ala Arg Asn Phe Met Lys Thr His Asn 3845 3850 3855
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- Ala Met Asp Val His Val Lys Ala Gly Arg Val Tyr Trp Thr Asn 3905 3910 3915
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Ile Gly Ser Ile Arg Leu Asn Gly Thr Asp Pro Ile Val Ala Ala 4070 4075 4080

- Asp Ser Lys Arg Gly Leu Ser His Pro Phe Ser Ile Asp Val Phe 4085 4090 4095
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- Lys Ile His Lys Phe Gly His Ser Pro Leu Val Asn Leu Thr Gly 4115 4120 4125
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- Lys Cys Arg Cys Gln Pro Arg Tyr Thr Gly Asp Lys Cys Glu Leu 4220 4225 4230
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- Asn Ser Thr Cys Thr Val Asn Gln Gly Asn Gln Pro Gln Cys Arg 4280 4285 4290

- Cys Leu Pro Gly Phe Leu Gly Asp Arg Cys Gln Tyr Arg Gln Cys 4295 4300 4305
- Ser Gly Tyr Cys Glu Asn Phe Gly Thr Cys Gln Met Ala Ala Asp 4310 4315 4320
- Gly Ser Arg Gln Cys Arg Cys Thr Ala Tyr Phe Glu Gly Ser Arg 4325 4330 4335
- Cys Glu Val Asn Lys Cys Ser Arg Cys Leu Glu Gly Ala Cys Val 4340 4345 4350
- Val Asn Lys Gln Ser Gly Asp Val Thr Cys Asn Cys Thr Asp Gly 4355 4360 4365
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- Ser Gln Gln Gln Pro Gly Gly Gly Arg Leu Val Pro Arg Gly Ser 4415 4420 4425
- Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ile Glu Gly His Val Gly 4430 4435
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- His His His His His His 4460
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- <211> 4419
- <212> PRT
- <213> H. sapiens
- <400> 9
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- Val Ala Ala Ile Asp Ala Pro Lys Thr Cys Ser Pro Lys Gln Phe 20 25 30

- Ala Cys Arg Asp Gln Ile Thr Cys Ile Ser Lys Gly Trp Arg Cys Asp 35 40 45
- Gly Glu Arg Asp Cys Pro Asp Gly Ser Asp Glu Ala Pro Glu Ile Cys
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- Pro Gln Ser Lys Ala Gln Arg Cys Gln Pro Asn Glu His Asn Cys Leu 65 70 75 80
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- Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln
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- Gly Asn Cys Ser Arg Leu Gly Cys Gln His His Cys Val Pro Thr Leu 115 120 125
- Asp Gly Pro Thr Cys Tyr Cys Asn Ser Ser Phe Gln Leu Gln Ala Asp 130 135 140
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- Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175
- Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190
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- Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220
- Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 225 230 235 240
- Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln Leu 245 250 255
- Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 265 270

- Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile Asp 275 280 285
- Trp Leu Thr Gly Asn Phe Tyr Phe Val Asp Asp Ile Asp Asp Arg Ile 290 295 300
- Phe Val Cys Asn Arg Asn Gly Asp Thr Cys Val Thr Leu Leu Asp Leu 305 310 315 320
- Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335
- Val Phe Phe Thr Asp Tyr Gly Gln Ile Pro Lys Val Glu Arg Cys Asp 340 345 350
- Met Asp Gly Gln Asn Arg Thr Lys Leu Val Asp Ser Lys Ile Val Phe 355 360 365
- Pro His Gly Ile Thr Leu Asp Leu Val Ser Arg Leu Val Tyr Trp Ala 370 375 380
- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385 390 395 400
- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410 415
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430
- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr 435 440 445
- Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455 460
- Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 465 470 475 480
- Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 485 490 495
- Asn Ser His Lys Ala Arg Thr Cys Arg Cys Arg Ser Gly Phe Ser Leu 500 505 510

- Gly Ser Asp Gly Lys Ser Cys Lys Lys Pro Glu His Glu Leu Phe Leu 515 520 525
- Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly 530 540
- Ala Lys Val Pro Asp Glu His Met Ile Pro Ile Glu Asn Leu Met Asn 545 550 555 560
- Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575
- Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu
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- Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala
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- Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro Lys 610 615 620
- Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640
- Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Val Val Asp
 645 650 655
- Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro Lys
 660 665 670
- Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser His
 675 680 685
- Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly Leu 690 695 700
- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720
- Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile Val 725 730 735
- Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly
 740 745 750

- Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg Leu
 755 760 765
- Glu Arg Gly Val Gly Gly Ala Pro Pro Thr Val Thr Leu Leu Arg Ser 770 775 780
- Glu Arg Pro Pro Ile Phe Glu Ile Arg Met Tyr Asp Ala Gln Gln 785 790 795 800
- Gln Val Gly Thr Asn Lys Cys Arg Val Asn Asn Gly Gly Cys Ser Ser 805 810 815
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- Leu Cys Asp Gly Asp Asn Asp Cys Gly Asn Ser Glu Asp Glu Ser Asn 915 920 925
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His Thr Cys Gln Ile Gln Ser Tyr Cys Ala Lys His Leu Lys Cys 1220 1225 1230

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- Glu Val Ala Lys Leu Asp Gly Thr Leu Arg Thr Thr Leu Leu Ala 1370 1375 1380
- Gly Asp Ile Glu His Pro Arg Ala Ile Ala Leu Asp Pro Arg Asp 1385 1390 1395
- Gly Ile Leu Phe Trp Thr Asp Trp Asp Ala Ser Leu Pro Arg Ile 1400 1405 1410
- Glu Ala Ala Ser Met Ser Gly Ala Gly Arg Arg Thr Val His Arg 1415 1420 1425
- Glu Thr Gly Ser Gly Gly Trp Pro Asn Gly Leu Thr Val Asp Tyr 1430 1435 1440

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- Tyr Ser Ala Arg Tyr Asp Gly Ser Gly His Met Glu Val Leu Arg 1460 1465 1470
- Gly His Glu Phe Leu Ser His Pro Phe Ala Val Thr Leu Tyr Gly 1475 1480 1485
- Gly Glu Val Tyr Trp Thr Asp Trp Arg Thr Asn Thr Leu Ala Lys 1490 1495 1500
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- Asn Thr Gln Pro Phe Asp Leu Gln Val Tyr His Pro Ser Arg Gln 1520 1525 1530
- Pro Met Ala Pro Asn Pro Cys Glu Ala Asn Gly Gly Gln Gly Pro 1535 1540 1545
- Cys Ser His Leu Cys Leu Ile Asn Tyr Asn Arg Thr Val Ser Cys 1550 1555 1560
- Ala Cys Pro His Leu Met Lys Leu His Lys Asp Asn Thr Thr Cys 1565 1570 1575
- Tyr Glu Phe Lys Lys Phe Leu Leu Tyr Ala Arg Gln Met Glu Ile 1580 1585 1590
- Arg Gly Val Asp Leu Asp Ala Pro Tyr Tyr Asn Tyr Ile Ile Ser 1595 1600 1605
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- Ala Arg Glu Gln Arg Val Tyr Trp Ser Asp Val Arg Thr Gln Ala 1625 1630 1635
- Ile Lys Arg Ala Phe Ile Asn Gly Thr Gly Val Glu Thr Val Val 1640 1650
- Ser Ala Asp Leu Pro Asn Ala His Gly Leu Ala Val Asp Trp Val 1655 1660 1665

Ser Arg Asn Leu Phe Trp Thr Ser Tyr Asp Thr Asn Lys Lys Gln 1670 1675 1680

- Ile Asn Val Ala Arg Leu Asp Gly Ser Phe Lys Asn Ala Val Val 1685 1695
- Gln Gly Leu Glu Gln Pro His Gly Leu Val Val His Pro Leu Arg 1700 1705 1710
- Gly Lys Leu Tyr Trp Thr Asp Gly Asp Asn Ile Ser Met Ala Asn 1715 1720 1725
- Met Asp Gly Ser Asn Arg Thr Leu Leu Phe Ser Gly Gln Lys Gly 1730 1740
- Pro Val Gly Leu Ala Ile Asp Phe Pro Glu Ser Lys Leu Tyr Trp 1745 1750 1755
- Ile Ser Ser Gly Asn His Thr Ile Asn Arg Cys Asn Leu Asp Gly 1760 1765 1770
- Ser Gly Leu Glu Val Ile Asp Ala Met Arg Ser Gln Leu Gly Lys 1775 1780 1785
- Ala Thr Ala Leu Ala Ile Met Gly Asp Lys Leu Trp Trp Ala Asp 1790 1795 1800
- Gln Val Ser Glu Lys Met Gly Thr Cys Ser Lys Ala Asp Gly Ser 1805 1810 1815
- Gly Ser Val Val Leu Arg Asn Ser Thr Thr Leu Val Met His Met 1820 1825 1830
- Lys Val Tyr Asp Glu Ser Ile Gln Leu Asp His Lys Gly Thr Asn 1835 1840 1845
- Pro Cys Ser Val Asn Asn Gly Asp Cys Ser Gln Leu Cys Leu Pro 1850 1855 1860
- Thr Ser Glu Thr Thr Arg Ser Cys Met Cys Thr Ala Gly Tyr Ser 1865 1870 1875
- Leu Arg Ser Gly Gln Gln Ala Cys Glu Gly Val Gly Ser Phe Leu 1880 1885 1890

- Leu Tyr Ser Val His Glu Gly Ile Arg Gly Ile Pro Leu Asp Pro 1895 1900 1905
- Asn Asp Lys Ser Asp Ala Leu Val Pro Val Ser Gly Thr Ser Leu 1910 1915 1920
- Ala Val Gly Ile Asp Phe His Ala Glu Asn Asp Thr Ile Tyr Trp 1925 1930 1935
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- Thr Trp Arg Glu Asp Val Val Thr Asn Gly Ile Gly Arg Val Glu
 1955 1960 1965
- Gly Ile Ala Val Asp Trp Ile Ala Gly Asn Ile Tyr Trp Thr Asp 1970 1975 1980
- Gln Gly Phe Asp Val Ile Glu Val Ala Arg Leu Asn Gly Ser Phe 1985 1990 1995
- Arg Tyr Val Val Ile Ser Gln Gly Leu Asp Lys Pro Arg Ala Ile 2000 2005 2010
- Thr Val His Pro Glu Lys Gly Tyr Leu Phe Trp Thr Glu Trp Gly 2015 2020 2025
- Gln Tyr Pro Arg Ile Glu Arg Ser Arg Leu Asp Gly Thr Glu Arg 2030 2035 2040
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Ser Ile Lys Arg Gly Ser Lys Asp Asn Ala Thr Asp Ser Val Pro Leu Arg Thr Gly Ile Gly Val Gln Leu Lys Asp Ile Lys Val Phe Asn Arg Asp Arg Gln Lys Gly Thr Asn Val Cys Ala Val Ala Asn Gly Gly Cys Gln Gln Leu Cys Leu Tyr Arg Gly Arg Gly Gln Arg Ala Cys Ala Cys Ala His Gly Met Leu Ala Glu Asp Gly Ala Ser Cys Arg Glu Tyr Ala Gly Tyr Leu Leu Tyr Ser Glu Arg Thr Ile Leu Lys Ser Ile His Leu Ser Asp Glu Arg Asn Leu Asn Ala Pro Val Gln Pro Phe Glu Asp Pro Glu His Met Lys Asn Val Ile Ala Leu Ala Phe Asp Tyr Arg Ala Gly Thr Ser Pro Gly Thr Pro Asn Arg Ile Phe Phe Ser Asp Ile His Phe Gly Asn Ile Gln Gln Ile Asn Asp Asp Gly Ser Arg Arg Ile Thr Ile Val Glu Asn Val Gly Ser Val Glu Gly Leu Ala Tyr His Arg Gly Trp Asp Thr Leu Tyr Trp Thr Ser Tyr Thr Thr Ser Thr Ile Thr Arg His Thr Val Asp Gln Thr Arg Pro Gly Ala Phe Glu Arg Glu Thr Val Ile Thr Met Ser Gly Asp Asp His Pro Arg Ala Phe Val Leu Asp Glu Cys Gln

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- Leu Ser Pro Cys Arg Ile Asn Asn Gly Gly Cys Gln Asp Leu Cys 2480 2485 2490
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- Ser Asp Glu Lys Pro Ser Tyr Cys Asn Ser Arg Arg Cys Lys Lys 2555 2560 2565

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- Gln Pro Glu Val Thr Asn Pro Cys Asp Arg Lys Lys Cys Glu Trp 4145 4150 4155
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<212> PRT

<213> H. sapiens

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35 40 45

Gly Glu Arg Asp Cys Pro Asp Gly Ser Asp Glu Ala Pro Glu Ile Cys
50 55 60

Pro Gln Ser Lys Ala Gln Arg Cys Gln Pro Asn Glu His Asn Cys Leu 65 70 75 80

Gly Thr Glu Leu Cys Val Pro Met Ser Arg Leu Cys Asn Gly Val Gln 85 90 95

Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln 100 105 110

Gly Asn Cys Ser Arg Leu Gly Cys Gln His His Cys Val Pro Thr Leu 115 120 125

Asp Gly Pro Thr Cys Tyr Cys Asn Ser Ser Phe Gln Leu Gln Ala Asp 130 135 140

Gly Lys Thr Cys Lys Asp Phe Asp Glu Cys Ser Val Tyr Gly Thr Cys 145 150 155 160

- Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175
- Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190
- Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 195 200 205
- Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220
- Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 225 230 235 240
- Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln Leu 245 250 255
- Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 265 270
- Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile Asp 275 280 285
- Trp Leu Thr Gly Asn Phe Tyr Phe Val Asp Asp Ile Asp Asp Arg Ile 290 295 300
- Phe Val Cys Asn Arg Asn Gly Asp Thr Cys Val Thr Leu Leu Asp Leu 305 310 315
- Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335
- Val Phe Phe Thr Asp Tyr Gly Gln Ile Pro Lys Val Glu Arg Cys Asp 340 345 350
- Met Asp Gly Gln Asn Arg Thr Lys Leu Val Asp Ser Lys Ile Val Phe 355 360 365
- Pro His Gly Ile Thr Leu Asp Leu Val Ser Arg Leu Val Tyr Trp Ala 370 375 380
- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385 390 395 400

- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410 415
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430
- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr 435 440 445
- Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455 460
- Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 465 470 475 480
- Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 485 490 495
- Asn Ser His Lys Ala Arg Thr Cys Arg Cys Arg Ser Gly Phe Ser Leu 500 505 510
- Gly Ser Asp Gly Lys Ser Cys Lys Lys Pro Glu His Glu Leu Phe Leu 515 520 525
- Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly 530 535 540
- Ala Lys Val Pro Asp Glu His Met Ile Pro Ile Glu Asn Leu Met Asn 545 550 555 560
- Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575
- Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu 580 585 590
- Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala
 595 600 605
- Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro Lys 610 615 620
- Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640

Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Val Val Asp 650 655

- Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro Lys 660 665
- Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser His 685
- Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly Leu 690 700
- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720
- Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile Val 735
- Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly 740 745 750
- Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg Leu 765
- Glu Arg Gly Val Gly Gly Ala Pro Pro Thr Val Thr Leu Leu Arg Ser 770 780
- Glu Arg Pro Pro Ile Phe Glu Ile Arg Met Tyr Asp Ala Gln Gln Gln 785 790 795
- Gln Val Gly Thr Asn Lys Cys Arg Val Asn Asn Gly Gly Cys Ser Ser 805
- Leu Cys Leu Ala Thr Pro Gly Ser Arg Gln Cys Ala Cys Ala Glu Asp 820 825 830
- Gln Val Leu Asp Ala Asp Gly Val Thr Cys Leu Ala Asn Pro Ser Tyr 835 840 845
- Val Pro Pro Pro Gln Cys Gln Pro Gly Glu Phe Ala Cys Ala Asn Ser 850 855 860
- Arg Cys Ile Gln Glu Arg Trp Lys Cys Asp Gly Asp Asn Asp Cys Leu 865 870 875

Asp Asn Ser Asp Glu Ala Pro Ala Leu Cys His Gln His Thr Cys Pro 885 890 895

- Ser Asp Arg Phe Lys Cys Glu Asn Asn Arg Cys Ile Pro Asn Arg Trp 900 905 910
- Leu Cys Asp Gly Asp Asn Asp Cys Gly Asn Ser Glu Asp Glu Ser Asn 915 920 925
- Ala Thr Cys Ser Ala Arg Thr Cys Pro Pro Asn Gln Phe Ser Cys Ala 930 935 940
- Ser Gly Arg Cys Ile Pro Ile Ser Trp Thr Cys Asp Leu Asp Asp 950 955 960
- Cys Gly Asp Arg Ser Asp Glu Ser Ala Ser Cys Ala Tyr Pro Thr Cys 965 970 975
- Phe Pro Leu Thr Gln Phe Thr Cys Asn Asn Gly Arg Cys Ile Asn Ile 980 985 990
- Asn Trp Arg Cys Asp Asn Asp Asn Asp Cys Gly Asp Asn Ser Asp Glu
 995 1000 1005
- Ala Gly Cys Ser His Ser Cys Ser Ser Thr Gln Phe Lys Cys Asn 1010 1015 1020
- Ser Gly Arg Cys Ile Pro Glu His Trp Thr Cys Asp Gly Asp Asn 1025 1030 1035
- Asp Cys Gly Asp Tyr Ser Asp Glu Thr His Ala Asn Cys Thr Asn 1040 1045 1050
- Gln Ala Thr Arg Pro Pro Gly Gly Cys His Thr Asp Glu Phe Gln 1055 1060 1065
- Cys Arg Leu Asp Gly Leu Cys Ile Pro Leu Arg Trp Arg Cys Asp 1070 1075 1080
- Gly Asp Thr Asp Cys Met Asp Ser Ser Asp Glu Lys Ser Cys Glu 1085 1090 1095
- Gly Val Thr His Val Cys Asp Pro Ser Val Lys Phe Gly Cys Lys 1100 1105 1110

- Asp Ser Ala Arg Cys Ile Ser Lys Ala Trp Val Cys Asp Gly Asp 1115
- Asn Asp Cys Glu Asp Asn Ser Asp Glu Glu Asn Cys Glu Ser Leu 1130 1135 1140
- Ala Cys Arg Pro Pro Ser His Pro Cys Ala Asn Asn Thr Ser Val 1145 1150 1155
- Cys Leu Pro Pro Asp Lys Leu Cys Asp Gly Asn Asp Asp Cys Gly 1160 1165 1170
- Asp Gly Ser Asp Glu Gly Glu Leu Cys Asp Gln Cys Ser Leu Asn 1175
- Asn Gly Gly Cys Ser His Asn Cys Ser Val Ala Pro Gly Glu Gly 1190 1195
- Ile Val Cys Ser Cys Pro Leu Gly Met Glu Leu Gly Pro Asp Asn 1205 1210 1215
- His Thr Cys Gln Ile Gln Ser Tyr Cys Ala Lys His Leu Lys Cys 1220 1225 1230
- Ser Gln Lys Cys Asp Gln Asn Lys Phe Ser Val Lys Cys Ser Cys 1235 1240 1245
- Tyr Glu Gly Trp Val Leu Glu Pro Asp Gly Glu Ser Cys Arg Ser 1250 1255 1260
- Leu Asp Pro Phe Lys Pro Phe Ile Ile Phe Ser Asn Arg His Glu 1265 1270 1275
- Ile Arg Arg Ile Asp Leu His Lys Gly Asp Tyr Ser Val Leu Val 1280 1285 1290
- Pro Gly Leu Arg Asn Thr Ile Ala Leu Asp Phe His Leu Ser Gln 1295 1300 1305
- Ser Ala Leu Tyr Trp Thr Asp Val Val Glu Asp Lys Ile Tyr Arg 1310 1315 1320
- Gly Lys Leu Leu Asp Asn Gly Ala Leu Thr Ser Phe Glu Val Val 1325

| Ile | Gln 1340 | Tyr | Gly | Leu | Ala | Thr 1345 | | Glu | Gly | Leu | Ala 1350 | | Asp | Trp |
|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Ile | Ala 1355 | Gly | Asn | Ile | Tyr | Trp 1360 | Val | Glu | Ser | Asn | Leu 1365 | | Gln | Ile |
| Glu | Val 1370 | | Lys | Leu | Asp | Gly 1375 | | Leu | Arg | Thr | Thr 1380 | | Leu | Ala |
| Gly | Asp 1385 | Ile | Glu | His | Pro | Arg 1390 | | Ile | Ala | Leu | Asp 1395 | | Arg | Asp |
| Gly | Ile 1400 | | Phe | Trp | Thr | Asp 1405 | | Asp | Ala | Ser | Leu 1410 | | Arg | Ile |
| Glu | Ala 1415 | Ala | Ser | Met | Ser | Gly 1420 | | Gly | Arg | Arg | Thr 1425 | | His | Arg |
| Glu | Thr 1430 | Gly | Ser | Gly | Gly | Trp 1435 | | Asn | Gly | Leu | Thr 1440 | | Asp | Tyr |
| Leu | Glu 1445 | Lys | Arg | Ile | Leu | Trp 1450 | Ile | Asp | Ala | Arg | Ser 1455 | Asp | Ala | Ile |
| Tyr | Ser 1460 | | Arg | Tyr | Asp | Gly 1465 | | Gly | His | Met | Glu 1470 | Val | Leu | Arg |
| Gly | His 1475 | Glu | Phe | Leu | Ser | His 1480 | Pro | Phe | Ala | Val | Thr 1485 | Leu | Tyr | Gly |
| Gly | Glu 1490 | Val | Tyr | Trp | Thr | Asp 1495 | Trp | Arg | Thr | Asn | Thr 1500 | Leu | Ala | Lys |
| Ala | Asn 1505 | Lys | Trp | Thr | Gly | His 1510 | Asn | Val | Thr | Val | Val 1515 | Gln | Arg | Thr |
| Asn | Thr 1520 | Gln | Pro | Phe | Asp | Leu 1525 | Gln | Val | туг | His | Pro 1530 | Ser | Arg | Gln |
| Pro | Met 1535 | Ala | Pro | Asn | Pro | Cys 1540 | | Ala | Asn | Gly | Gly 1545 | Gln | Gly | Pro |
| Cys | Ser 1550 | His | Leu | Cys | Leu | Ile 1555 | Asn | Tyr | Asn | Arg | Thr 1560 | Val | Ser | Cys |

- Ala Cys Pro His Leu Met Lys Leu His Lys Asp Asn Thr Thr Cys 1565 1570 1575
- Tyr Glu Phe Lys Lys Phe Leu Leu Tyr Ala Arg Gln Met Glu Ile 1580 1585 1590
- Arg Gly Val Asp Leu Asp Ala Pro Tyr Tyr Asn Tyr Ile Ile Ser 1595 1600 1605
- Phe Thr Val Pro Asp Ile Asp Asn Val Thr Val Leu Asp Tyr Asp 1610 1615 1620
- Ala Arg Glu Gln Arg Val Tyr Trp Ser Asp Val Arg Thr Gln Ala 1625 1630 1635
- Ile Lys Arg Ala Phe Ile Asn Gly Thr Gly Val Glu Thr Val Val 1640 1645 1650
- Ser Ala Asp Leu Pro Asn Ala His Gly Leu Ala Val Asp Trp Val 1655 1660 1665
- Ser Arg Asn Leu Phe Trp Thr Ser Tyr Asp Thr Asn Lys Lys Gln 1670 1675 1680
- Ile Asn Val Ala Arg Leu Asp Gly Ser Phe Lys Asn Ala Val Val 1685 1690 1695
- Gln Gly Leu Glu Gln Pro His Gly Leu Val Val His Pro Leu Arg 1700 1705 1710
- Gly Lys Leu Tyr Trp Thr Asp Gly Asp Asn Ile Ser Met Ala Asn 1715 1720 1725
- Met Asp Gly Ser Asn Arg Thr Leu Leu Phe Ser Gly Gln Lys Gly 1730 1735 1740
- Pro Val Gly Leu Ala Ile Asp Phe Pro Glu Ser Lys Leu Tyr Trp 1745 1750 1755
- Ile Ser Ser Gly Asn His Thr Ile Asn Arg Cys Asn Leu Asp Gly 1760 1765 1770
- Ser Gly Leu Glu Val Ile Asp Ala Met Arg Ser Gln Leu Gly Lys 1775 1780 1785

| Ala | Thr 1790 | Ala | Leu | Ala | Ile | Met 1795 | Gly | Asp | Lys | Leu | Trp 1800 | Trp | Ala | Asp |
|-----|-------------|-----|-------|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Gln | Val 1805 | Ser | Glu | Lys | Met | Gly 1810 | | Cys | Ser | Lys | Ala 1815 | Asp | Gly | Ser |
| Gly | Ser 1820 | Val | Val | Leu | | Asn 1825 | | Thr | Thr | Leu | Val 1830 | Met | His | Met |
| Lys | Val 1835 | туr | Asp | Glu | Ser | Ile 1840 | | Leu | Asp | His | Lys 1845 | Gly | Thr | Asn |
| Pro | Cys 1850 | Ser | Val | Asn | Asn | Gly 1855 | | Cys | Ser | Gln | Leu 1860 | Cys | Leu | Pro |
| Thr | Ser 1865 | | Thr | Thr | Arg | Ser 1870 | | Met | Cys | Thr | Ala 1875 | Gly | Tyr | Ser |
| Leu | Arg 1880 | | Gly | Gln | Gln | Ala 1885 | | Glu | Gly | Val | Gly 1890 | Ser | Phe | Leu |
| Leu | Tyr 1895 | | Val | His | Glu | Gly 1900 | | Arg | Gly | Ile | Pro 1905 | | Asp | Pro |
| Asn | Asp 1910 | | Ser | Asp | Ala | Leu 1915 | | Pro | Val | Ser | Gly 1920 | Thr | Ser | Leu |
| Ala | Val 1925 | _ | Ile | Asp | Phe | His 1930 | | Glu | Asn | Asp | Thr 1935 | Ile | Tyr | Trp |
| | Asp 1940 | | Gly | Leu | Ser | Thr 1945 | | Ser | Arg | Ala | Lys 1950 | Arg | Asp | Gln |
| Thr | Trp 1955 | | Glu | Asp | Val | Val 1960 | | Asn | Gly | Ile | Gly 1965 | Arg | Val | Glu |
| Gly | Ile 1970 | | Val | Asp | Trp | Ile 1975 | | Gly | Asn | Ile | Tyr 1980 | | Thr | Asp |
| Gln | Gly 1985 | | . Asp | Val | Ile | Glu 1990 | | Ala | Arg | Leu | Asn 1995 | | Ser | Phe |
| Arg | Tyr 2000 | | . Val | Ile | Ser | Gln 2005 | | Leu | Asp | Lys | Pro 2010 | | Ala | Ile |

- Thr Val His Pro Glu Lys Gly Tyr Leu Phe Trp Thr Glu Trp Gly 2015 2025
- Gln Tyr Pro Arg Ile Glu Arg Ser Arg Leu Asp Gly .Thr Glu Arg 2030 2035 2040
- Val Val Leu Val Asn Val Ser Ile Ser Trp Pro Asn Gly Ile Ser 2045 2050 2055
- Val Asp Tyr Gln Asp Gly Lys Leu Tyr Trp Cys Asp Ala Arg Thr 2060 2065 2070
- Asp Lys Ile Glu Arg Ile Asp Leu Glu Thr Gly Glu Asn Arg Glu 2075 2080 2085
- Val Val Leu Ser Ser Asn Asn Met Asp Met Phe Ser Val Ser Val 2090 2095 2100
- Phe Glu Asp Phe Ile Tyr Trp Ser Asp Arg Thr His Ala Asn Gly 2105 2110
- Ser Ile Lys Arg Gly Ser Lys Asp Asn Ala Thr Asp Ser Val Pro 2120 2125 2130
- Leu Arg Thr Gly Ile Gly Val Gln Leu Lys Asp Ile Lys Val Phe 2135 2140 2145
- Asn Arg Asp Arg Gln Lys Gly Thr Asn Val Cys Ala Val Ala Asn 2150 2155 2160
- Gly Gly Cys Gln Gln Leu Cys Leu Tyr Arg Gly Arg Gly Gln Arg 2165 2170 2175
- Ala Cys Ala Cys Ala His Gly Met Leu Ala Glu Asp Gly Ala Ser 2180 2185 2190
- Cys Arg Glu Tyr Ala Gly Tyr Leu Leu Tyr Ser Glu Arg Thr Ile 2195 2200 2205
- Leu Lys Ser Ile His Leu Ser Asp Glu Arg Asn Leu Asn Ala Pro 2210 2215 2220
- Val Gln Pro Phe Glu Asp Pro Glu His Met Lys Asn Val Ile Ala 2225 2230 2235

| Leu | Ala 2240 | Phe | Asp | Tyr | Arg | Ala 2245 | Gly | Thr | Ser | Pro | Gly 2250 | Thr | Pro | Asn |
|-----|-------------|-----|-----|-------|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Arg | Ile 2255 | Phe | Phe | Ser | Asp | Ile 2260 | His | Phe | Gly | Asn | Ile 2265 | Gln | Gln | Ile |
| Asn | Asp 2270 | Asp | Gly | Ser | Arg | Arg 2275 | | Thr | Ile | Val | Glu 2280 | Asn | Val | Gly |
| Ser | Val 2285 | Glu | Gly | Leu | | Tyr 2290 | | Arg | Gly | Trp | Asp 2295 | Thr | Leu | Tyr |
| Trp | Thr 2300 | Ser | Tyr | Thr | Thr | Ser 2305 | | Ile | Thr | Arg | His 2310 | | Val | Asp |
| Gln | Thr 2315 | _ | Pro | Gly | Ala | Phe 2320 | | Arg | Glu | Thr | Val 2325 | | Thr | Met |
| Ser | Gly 2330 | _ | Asp | His | Pro | Arg 2335 | | Phe | Val | Leu | Asp 2340 | | Cys | Gln |
| Asn | Leu 2345 | | Phe | Trp | Thr | Asn 2350 | | Asn | Glu | Gln | His 2355 | | Ser | Ile |
| Met | Arg 2360 | | Ala | Leu | | Gly 2365 | | Asn | Val | Leu | Thr 2370 | | Ile | Glu |
| Lys | Asp 2375 | | Arg | Thr | Pro | Asn 2380 | | Leu | Ala | Ile | Asp 2385 | | Arg | Ala |
| Glu | Lys 2390 | | Tyr | Phe | Ser | Asp 2395 | | Thr | | | Lys 2400 | | Glu | Arg |
| Cys | Glu 2405 | _ | Asp | Gly | | His 2410 | | Tyr | Val | Ile | Leu 2415 | | Ser | Glu |
| Pro | Val 2420 | | Pro | Phe | Gly | Leu 2425 | | Val | Tyr | Gly | Glu 2430 | | Ile | Phe |
| Trp | Thr 2435 | | Trp | Val | Arg | Arg 2440 | | Val | Gln | Arg | Ala 2445 | | Lys | His |
| Val | Gly 2450 | | Asn | . Met | Lys | Leu 2455 | | Arg | Val | Asp | Ile 2460 | | Gln | Gln |

Pro Met Gly Ile Ile Ala Val Ala Asn Asp Thr Asn Ser Cys Glu 2475

- Leu Ser Pro Cys Arg Ile Asn Asn Gly Gly Cys Gln Asp Leu Cys 2480 2485
- Leu Leu Thr His Gln Gly His Val Asn Cys Ser Cys Arg Gly Gly 2495 2500 2505
- Arg Ile Leu Gln Asp Asp Leu Thr Cys Arg Ala Val Asn Ser Ser 2510 2515 2520
- Cys Arg Ala Gln Asp Glu Phe Glu Cys Ala Asn Gly Glu Cys Ile 2525 2530 2535
- Asn Phe Ser Leu Thr Cys Asp Gly Val Pro His Cys Lys Asp Lys 2540 2545
- Ser Asp Glu Lys Pro Ser Tyr Cys Asn Ser Arg Arg Cys Lys Lys 2555 2560 2565
- Thr Phe Arg Gln Cys Ser Asn Gly Arg Cys Val Ser Asn Met Leu 2570 2575 2580
- Trp Cys Asn Gly Ala Asp Asp Cys Gly Asp Gly Ser Asp Glu Ile 2585 2590 2595
- Pro Cys Asn Lys Thr Ala Cys Gly Val Gly Glu Phe Arg Cys Arg 2600 2605
- Asp Gly Thr Cys Ile Gly Asn Ser Ser Arg Cys Asn Gln Phe Val 2615 2620 2625
- Asp Cys Glu Asp Ala Ser Asp Glu Met Asn Cys Ser Ala Thr Asp 2630 2635 2640
- Cys Ser Ser Tyr Phe Arg Leu Gly Val Lys Gly Val Leu Phe Gln 2645 2650
- Pro Cys Glu Arg Thr Ser Leu Cys Tyr Ala Pro Ser Trp Val Cys 2660 2665 2670
- Asp Gly Ala Asn Asp Cys Gly Asp Tyr Ser Asp Glu Arg Asp Cys 2675 2680 2685

| Pro | Gly 2690 | Val | Lys | Arg | Pro | Arg 2695 | Cys | Pro | Leu | Asn | Tyr 2700 | Phe | Ala | Cys |
|-----|-------------|-----|-----|-------|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Pro | Ser 2705 | Gly | Arg | Cys | Ile | Pro 2710 | Met | Ser | Trp | Thr | Cys 2715 | Asp | Lys | Glu |
| Asp | Asp 2720 | Cys | Glu | His | Gly | Glu 2725 | Asp | Glu | Thr | His | Cys 2730 | Asn | Lys | Phe |
| Cys | Ser 2735 | Glu | Ala | Gln | Phe | Glu 2740 | | Gln | Asn | His | Arg 2745 | Cys | Ile | Ser |
| Lys | Gln 2750 | Trp | Leu | Cys | Asp | Gly 2755 | | Asp | Asp | Cys | Gly 2760 | Asp | Gly | Ser |
| Asp | Glu 2765 | | Ala | His | Cys | Glu 2770 | | Lys | Thr | Cys | Gly 2775 | Pro | Ser | Ser |
| Phe | Ser 2780 | | Pro | Gly | Thr | His 2785 | | Cys | Val | Pro | Glu 2790 | Arg | Trp | Leu |
| Cys | Asp 2795 | _ | Asp | Lys | Asp | Cys 2800 | | Asp | Gly | Ala | Asp 2805 | | Ser | Ile |
| Ala | Ala 2810 | _ | Cys | Leu | Tyr | Asn 2815 | | Thr | Cys | Asp | Asp 2820 | | Glu | Phe |
| Met | Cys 2825 | | Asn | Arg | Gln | Cys 2830 | | Pro | Lys | His | Phe 2835 | | Cys | Asp |
| | Asp 2840 | | Asp | Cys | Ala | Asp 2845 | | Ser | Asp | Glu | Ser 2850 | | Glu | Cys |
| Glu | Tyr 2855 | | Thr | Cys | Gly | Pro 2860 | | Glu | Phe | Arg | Cys 2865 | | Asn | Gly |
| Arg | Cys 2870 | | Ser | Ser | Arg | Gln 2875 | | Glu | Cys | Asp | Gly 2880 | | Asn | Asp |
| Суз | His 2885 | | Glr | . Ser | Asp | Glu 2890 | | Pro | Lys | Asn | Pro 2895 | | Cys | Thr |
| Ser | Pro 2900 | | His | . Lys | Cys | Asn 2905 | | Ser | Ser | Gln | Phe 2910 | | Cys | Ser |

Ser Gly Arg Cys Val Ala Glu Ala Leu Leu Cys Asn Gly Gln Asp 2915 2920 2925

- Asp Cys Gly Asp Ser Ser Asp Glu Arg Gly Cys His Ile Asn Glu 2930 2935
- Cys Leu Ser Arg Lys Leu Ser Gly Cys Ser Gln Asp Cys Glu Asp 2945 2950 2955
- Leu Lys Ile Gly Phe Lys Cys Arg Cys Arg Pro Gly Phe Arg Leu 2960 2965 2970
- Lys Asp Asp Gly Arg Thr Cys Ala Asp Val Asp Glu Cys Ser Thr 2975 2980 2985
- Thr Phe Pro Cys Ser Gln Arg Cys Ile Asn Thr His Gly Ser Tyr 2990 2995 3000
- Lys Cys Leu Cys Val Glu Gly Tyr Ala Pro Arg Gly Gly Asp Pro 3005 3010 3015
- His Ser Cys Lys Ala Val Thr Asp Glu Glu Pro Phe Leu Ile Phe 3020 3025 3030
- Ala Asn Arg Tyr Tyr Leu Arg Lys Leu Asn Leu Asp Gly Ser Asn 3035 3040 3045
- Tyr Thr Leu Leu Lys Gln Gly Leu Asn Asn Ala Val Ala Leu Asp 3050 3055
- Phe Asp Tyr Arg Glu Gln Met Ile Tyr Trp Thr Asp Val Thr Thr 3065 3070 3075
- Gln Gly Ser Met Ile Arg Arg Met His Leu Asn Gly Ser Asn Val 3080 3085 3090
- Gln Val Leu His Arg Thr Gly Leu Ser Asn Pro Asp Gly Leu Ala 3095 3100 3105
- Val Asp Trp Val Gly Gly Asn Leu Tyr Trp Cys Asp Lys Gly Arg 3110 3115
- Asp Thr Ile Glu Val Ser Lys Leu Asn Gly Ala Tyr Arg Thr Val 3125 3130 3135

| Leu | Val 3140 | Ser | Ser | Gly | | Arg 3145 | Glu | Pro | Arg | Ala | Leu 3150 | Val | Val | Asp |
|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Val | Gln 3155 | Asn | Gly | Tyr | Leu | Tyr 3160 | Trp | Thr | Asp | Trp | Gly 3165 | Asp | His | Ser |
| Leu | Ile 3170 | Gly | Arg | Ile | | Met 3175 | | Gly | Ser | Ser | Arg 3180 | Ser | Val | Ile |
| Val | Asp 3185 | | Lys | Ile | Thr | Trp 3190 | | Asn | Gly | Leu | Thr 3195 | Leu | Asp | Tyr |
| Val | Thr 3200 | | Arg | Ile | | Trp 3205 | | Asp | Ala | Arg | Glu 3210 | Asp | Tyr | Ile |
| Glu | Phe 3215 | | Ser | Leu | | Gly 3220 | | Asn | Arg | His | Val 3225 | Val | Leu | Ser |
| Gln | Asp 3230 | | Pro | His | | Phe 3235 | | Leu | Thr | Leu | Phe 3240 | Glu | Asp | Tyr |
| Val | Tyr 3245 | | Thr | Asp | Trp | Glu 3250 | | Lys | Ser | Ile | Asn 3255 | Arg | Ala | His |
| Lys | Thr 3260 | | Gly | Thr | Asn | Lys 3265 | | Leu | Leu | Ile | Ser 3270 | Thr | Leu | His |
| Arg | Pro 3275 | | Asp | Leu | His | Val 3280 | | His | Ala | Leu | Arg 3285 | Gln | Pro | Asp |
| Val | Pro 3290 | | | Pro | | Lys 3295 | | | Asn | | Gly 3300 | Cys | Ser | Asn |
| Leu | Cys 3305 | | Leu | Ser | Pro | Gly 3310 | | Gly | His | Lys | Cys 3315 | Ala | Cys | Pro |
| Thr | Asn 3320 | | Tyr | Leu | Gly | Ser 3325 | | Gly | Arg | Thr | Cys 3330 | Val | Ser | Asn |
| Cys | Thr 3335 | | Ser | Gln | Phe | Val 3340 | | Lys | Asn | Asp | Lys 3345 | Cys | Ile | Pro |
| Phe | Trp 3350 | | Lys | Cys | Asp | Thr 3355 | | Asp | Asp | Cys | Gly 3360 | Asp | His | Ser |

- Asp Glu Pro Pro Asp Cys Pro Glu Phe Lys Cys Arg Pro Gly Gln 3365 3370 3375
- Phe Gln Cys Ser Thr Gly Ile Cys Thr Asn Pro Ala Phe Ile Cys 3380 3385 3390
- Asp Gly Asp Asn Asp Cys Gln Asp Asn Ser Asp Glu Ala Asn Cys 3405
- Asp Ile His Val Cys Leu Pro Ser Gln Phe Lys Cys Thr Asn Thr 3410 3415 3420
- Asn Arg Cys Ile Pro Gly Ile Phe Arg Cys Asn Gly Gln Asp Asn 3425 3435
- Cys Gly Asp Gly Glu Asp Glu Arg Asp Cys Pro Glu Val Thr Cys 3440 3445
- Ala Pro Asn Gln Phe Gln Cys Ser Ile Thr Lys Arg Cys Ile Pro 3455 3460 3465
- Arg Val Trp Val Cys Asp Arg Asp Asn Asp Cys Val Asp Gly Ser 3470 3475 3480
- Asp Glu Pro Ala Asn Cys Thr Gln Met Thr Cys Gly Val Asp Glu 3485 3490 3495
- Phe Arg Cys Lys Asp Ser Gly Arg Cys Ile Pro Ala Arg Trp Lys 3500 3505
- Cys Asp Gly Glu Asp Asp Cys Gly Asp Gly Ser Asp Glu Pro Lys 3515 3520 3525
- Glu Glu Cys Asp Glu Arg Thr Cys Glu Pro Tyr Gln Phe Arg Cys 3530 3540
- Lys Asn Asn Arg Cys Val Pro Gly Arg Trp Gln Cys Asp Tyr Asp 3545 3550 3555
- Asn Asp Cys Gly Asp Asn Ser Asp Glu Glu Ser Cys Thr Pro Arg 3560 3565 3570
- Pro Cys Ser Glu Ser Glu Phe Ser Cys Ala Asn Gly Arg Cys Ile 3575 3580 3585

| Ala | Gly 3590 | Arg | Trp | Lys | Cys | Asp 3595 | Gly | Asp | His | Asp | Cys 3600 | Ala | Asp | Gly |
|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Ser | Asp 3605 | Glu | Lys | Asp | Cys | Thr 3610 | Pro | Arg | Cys | Asp | Met 3615 | Asp | Gln | Phe |
| Gln | Cys 3620 | Lys | Ser | Gly | His | Суз 3625 | | Pro | Leu | Arg | Trp 3630 | Arg | Cys | Asp |
| Ala | Asp 3635 | Ala | Asp | Cys | Met | Asp 3640 | Gly | Ser | Asp | Glu | Glu 3645 | Ala | Cys | Gly |
| Thr | Gly 3650 | | Arg | Thr | Cys | Pro 3655 | Leu | Asp | Glu | Phe | Gln 3660 | Cys | Asn | Asn |
| Thr | Leu 3665 | _ | Lys | Pro | Leu | Ala 3670 | Trp | Lys | Cys | Asp | Gly 3675 | Glu | Asp | Asp |
| Cys | Gly 3680 | _ | Asn | Ser | Asp | Glu 3685 | Asn | Pro | Glu | Glu | Cys 3690 | Ala | Arg | Phe |
| Val | Cys 3695 | | Pro | Asn | Arg | Pro 3700 | Phe | Arg | Cys | Lys | Asn 3705 | Asp | Arg | Val |
| Cys | Leu 3710 | _ | Ile | Gly | Arg | Gln 3715 | Cys | Asp | Gly | Thr | Asp 3720 | Asn | Cys | Gly |
| Asp | Gly 3725 | | Asp | Glu | Glu | Asp 3730 | Cys | Glu | Pro | Pro | Thr 3735 | Ala | His | Thr |
| Thr | His 3740 | _ | Lys | Asp | Ĺуs | Lys 3745 | Glu | Phe | Leu | Суз | Arg 3750 | Asn | Gln | Arg |
| Cys | Leu 3755 | | Ser | Ser | Leu | Arg 3760 | Суз | Asn | Met | Phe | Asp 3765 | Asp | Cys | Gly |
| Asp | Gly 3770 | | Asp | Glu | Glu | Asp 3775 | Суз | Ser | Ile | Asp | Pro 3780 | ГЛЗ | Leu | Thr |
| Ser | Cys 3785 | | Thr | Asn | Ala | Ser 3790 | Ile | Cys | Gly | Asp | Glu 3795 | Ala | Arg | Cys |
| Val | Arg 3800 | | Glu | Lys | Ala | Ala 3805 | Tyr | Cys | Ala | Cys | Arg 3810 | Ser | Gly | Phe |

His Thr Val Pro Gly Gln Pro Gly Cys Gln Asp Ile Asn Glu Cys 3815

- Leu Arg Phe Gly Thr Cys Ser Gln Leu Cys Asn Asn Thr Lys Gly 3830 3835
- Gly His Leu Cys Ser Cys Ala Arg Asn Phe Met Lys Thr His Asn 3845
- Thr Cys Lys Ala Glu Gly Ser Glu Tyr Gln Val Leu Tyr Ile Ala 3860 3865 3870
- Asp Asp Asn Glu Ile Arg Ser Leu Phe Pro Gly His Pro His Ser 3875
- Ala Tyr Glu Gln Ala Phe Gln Gly Asp Glu Ser Val Arg Ile Asp 3890 3895 3900
- Ala Met Asp Val His Val Lys Ala Gly Arg Val Tyr Trp Thr Asn 3905 3910 3915
- Trp His Thr Gly Thr Ile Ser Tyr Arg Ser Leu Pro Pro Ala Ala 3920 3925 3930
- Pro Pro Thr Thr Ser Asn Arg His Arg Arg Gln Ile Asp Arg Gly 3935 3940 3945
- Val Thr His Leu Asn Ile Ser Gly Leu Lys Met Pro Arg Gly Ile 3950 3955 3960
- Ala Ile Asp Trp Val Ala Gly Asn Val Tyr Trp Thr Asp Ser Gly 3965 3970 3975
- Arg Asp Val Ile Glu Val Ala Gln Met Lys Gly Glu Asn Arg Lys 3980 3985
- Thr Leu Ile Ser Gly Met Ile Asp Glu Pro His Ala Ile Val Val 3995 4000 4005
- Asp Pro Leu Arg Gly Thr Met Tyr Trp Ser Asp Trp Gly Asn His 4010 4015
- Pro Lys Ile Glu Thr Ala Ala Met Asp Gly Thr Leu Arg Glu Thr 4025 4030 4035

| Leu | Val 4040 | Gln | Asp | Asn | | Gln 4045 | Trp | Pro | Thr | | Leu 4050 | Ala | Val | Asp |
|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Tyr | His 4055 | Asn | Glu | Arg | Leu | Tyr 4060 | Trp | Ala | Asp | Ala | Lys 4065 | Leu | Ser | Val |
| Ile | Gly 4070 | | Ile | Arg | | Asn 4075 | | Thr | Asp | Pro | Ile 4080 | Val | Ala | Ala |
| Asp | Ser 4085 | | Arg | Gly | | Ser 4090 | | Pro | Phe | Ser | Ile 4095 | Asp | Val | Phe |
| Glu | Asp 4100 | | Ile | Tyr | | Val 4105 | | Tyr | Ile | Asn | Asn 4110 | Arg | Val | Phe |
| Lys | Ile 4115 | | Lys | Phe | | His 4120 | | Pro | Leu | Val | Asn 4125 | Leu | Thr | Gly |
| Gly | Leu 4130 | | His | Ala | | Asp 4135 | | Val | Leu | Tyr | His 4140 | Gln | His | Lys |
| Gln | Pro 4145 | | Val | Thr | Asn | Pro 4150 | | Asp | Arg | Lys | Lys 4155 | Сув | Glu | Trp |
| Leu | Cys 4160 | | Leu | Ser | Pro | Ser 4165 | | Pro | Val | Cys | Thr 4170 | Cys | Pro | Asn |
| Gly | Lys 4175 | | Leu | Asp | | Gly 4180 | | Cys | Val | Pro | Val 4185 | Pro | Ser | Pro |
| Thr | Pro 4190 | | Pro | Asp | | Pro 4195 | | Pro | Gly | Thr | Cys 4200 | Asn | Leu | Gln |
| Cys | Phe 4205 | | Gly | Gly | Ser | Cys 4210 | | Leu | Asn | Ala | Arg 4215 | | Gln | Pro |
| Lys | Cys 4220 | | Cys | Gln | Pro | Arg 4225 | | Thr | Gly | Asp | Lys 4230 | Суз | Glu | Leu |
| Asp | Gln 4235 | _ | Trp | Glu | His | Cys 4240 | | Asn | Gly | Gly | Thr 4245 | Cys | Ala | Ala |
| Ser | Pro 4250 | | Gly | Met | Pro | Thr 4255 | | Arg | Cys | Pro | Thr 4260 | Gly | Phe | Thr |

Gly Pro Lys Cys Thr Gln Gln Val Cys Ala Gly Tyr Cys Ala Asn 4265 4270 4275

Asn Ser Thr Cys Thr Val Asn Gln Gly Asn Gln Pro Gln Cys Arg 4280 4285 4290

Cys Leu Pro Gly Phe Leu Gly Asp Arg Cys Gln Tyr Arg Gln Cys 4295 4300 4305

Ser Gly Tyr Cys Glu Asn Phe Gly Thr Cys Gln Met Ala Ala Asp 4310 4315 4320

Gly Ser Arg Gln Cys Arg Cys Thr Ala Tyr Phe Glu Gly Ser Arg 4325 4330 4335

Cys Glu Val Asn Lys Cys Ser Arg Cys Leu Glu Gly Ala Cys Val 4340 4345 4350

Val Asn Lys Gln Ser Gly Asp Val Thr Cys Asn Cys Thr Asp Gly
4355 4360 4365

Arg Val Ala Pro Ser Cys Leu Thr Cys Val Gly His Cys Ser Asn 4370 4375 4380

Gly Gly Ser Cys Thr Met Asn Ser Lys Met Met Pro Glu Cys Gln 4385 4390 4395

Cys Pro Pro His Met Thr Gly Pro Arg Cys Glu Glu His Val Phe 4400 4405 4410

Ser Gln Gln Pro Gly Gly Gly Arg Leu Val Pro Arg Gly Ser 4415 4420 4425

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ile Glu Gly His Val Gly 4430 4435 4440

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Gly Glu Arg Asp Cys Pro Asp Gly Ser Asp Glu Ala Pro Glu Ile Cys 50 55 60

Pro Gln Ser Lys Ala Gln Arg Cys Gln Pro Asn Glu His Asn Cys Leu 65 70 75 80

Gly Thr Glu Leu Cys Val Pro Met Ser Arg Leu Cys Asn Gly Val Gln 85 90 95

Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln
100 105 110

Gly Asn Cys Ser Arg Leu Gly Cys Gln His His Cys Val Pro Thr Leu 115 120 125

Asp Gly Pro Thr Cys Tyr Cys Asn Ser Ser Phe Gln Leu Gln Ala Asp 130 135 140

Gly Lys Thr Cys Lys Asp Phe Asp Glu Cys Ser Val Tyr Gly Thr Cys 145 150 155 160

Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175

Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190

Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 195 200 205

Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220

Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 225 230 235 240 Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln Leu 245 250 255

- Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 265 270
- Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile Asp 275 280 285
- Trp Leu Thr Gly Asn Phe Tyr Phe Val Asp Asp Ile Asp Asp Arg Ile 290 295 300
- Phe Val Cys Asn Arg Asn Gly Asp Thr Cys Val Thr Leu Leu Asp Leu 305 310 315 320
- Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335
- Val Phe Phe Thr Asp Tyr Gly Gln Ile Pro Lys Val Glu Arg Cys Asp 340 345 350
- Met Asp Gly Gln Asn Arg Thr Lys Leu Val Asp Ser Lys Ile Val Phe 355 360 365
- Pro His Gly Ile Thr Leu Asp Leu Val Ser Arg Leu Val Tyr Trp Ala 370 375 380
- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385 395 400
- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410 415
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430
- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr 435 440 445
- Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455 460
- Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 470 475 480

Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 485 490 495

- Asn Ser His Lys Ala Arg Thr Cys Arg Cys Arg Ser Gly Phe Ser Leu 500 505 510
- Gly Ser Asp Gly Lys Ser Cys Lys Lys Pro Glu His Glu Leu Phe Leu 515 520 525
- Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly 530 535 540
- Ala Lys Val Pro Asp Glu His Met Ile Pro Ile Glu Asn Leu Met Asn 545 550 550 560
- Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575
- Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu 580 585 590
- Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala 595 600 605
- Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro Lys 610 615 620
- Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640
- Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Val Val Asp 645 650 655
- Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro Lys 660 665 670
- Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser His 675 680 685
- Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly Leu 690 695 700
- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720

Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile Val 725

- Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly 740 745
- Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg Leu 765 755 760 765
- Glu Arg Gly Val Gly Gly Ala Pro Pro Thr Val Thr Leu Leu Arg Ser 770 780
- Glu Arg Pro Pro Ile Phe Glu Ile Arg Met Tyr Asp Ala Gln Gln Gln 785
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- Val Pro Pro Pro Gln Cys Gln Pro Gly Glu Phe Ala Cys Ala Asn Ser 850 855
- Arg Cys Ile Gln Glu Arg Trp Lys Cys Asp Gly Asp Asn Asp Cys Leu 865 870 880
- Asp Asn Ser Asp Glu Ala Pro Ala Leu Cys His Gln His Thr Cys Pro 895
- Ser Asp Arg Phe Lys Cys Glu Asn Asn Arg Cys Ile Pro Asn Arg Trp 900 900 910
- Leu Cys Asp Gly Asp Asn Asp Cys Gly Asn Ser Glu Asp Glu Ser Asn 920 925
- Ala Thr Cys Ser Ala Arg Thr Cys Pro Pro Asn Gln Phe Ser Cys Ala 930 935
- Ser Gly Arg Cys Ile Pro Ile Ser Trp Thr Cys Asp Leu Asp Asp Asp 950 955 960

Cys Gly Asp Arg Ser Asp Glu Ser Ala Ser Cys Ala Tyr Pro Thr Cys 965 970 975

- Phe Pro Leu Thr Gln Phe Thr Cys Asn Asn Gly Arg Cys Ile Asn Ile 980 985 990
- Asn Trp Arg Cys Asp Asn Asp Asn Asp Cys Gly Asp Asn Ser Asp Glu 995 1000 1005
- Ala Gly Cys Ser His Ser Cys Ser Ser Thr Gln Phe Lys Cys Asn 1010 1015 1020
- Ser Gly Arg Cys Ile Pro Glu His Trp Thr Cys Asp Gly Asp Asn 1025 1030 1035
- Asp Cys Gly Asp Tyr Ser Asp Glu Thr His Ala Asn Cys Thr Asn 1040 1045 1050
- Gln Ala Thr Arg Pro Pro Gly Gly Cys His Thr Asp Glu Phe Gln 1055 1060 1065
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- Ile Val Cys Ser Cys Pro Leu Gly Met Glu Leu Gly Pro Asp Asn 1205 1210 1215
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- Ile Arg Arg Ile Asp Leu His Lys Gly Asp Tyr Ser Val Leu Val 1280 1285 1290
- Pro Gly Leu Arg Asn Thr Ile Ala Leu Asp Phe His Leu Ser Gln 1295 1300 1305
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- Glu Val Ala Lys Leu Asp Gly Thr Leu Arg Thr Thr Leu Leu Ala 1370 1375 1380
- Gly Asp Ile Glu His Pro Arg Ala Ile Ala Leu Asp Pro Arg Asp 1385 1390 1395
- Gly Ile Leu Phe Trp Thr Asp Trp Asp Ala Ser Leu Pro Arg Ile 1400 1405 1410

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- Glu Thr Gly Ser Gly Gly Trp Pro Asn Gly Leu Thr Val Asp Tyr 1430 1435 1440
- Leu Glu Lys Arg Ile Leu Trp Ile Asp Ala Arg Ser Asp Ala Ile 1445 1450 1455
- Tyr Ser Ala Arg Tyr Asp Gly Ser Gly His Met Glu Val Leu Arg 1460 1465 1470
- Gly His Glu Phe Leu Ser His Pro Phe Ala Val Thr Leu Tyr Gly 1475 1480 1485
- Gly Glu Val Tyr Trp Thr Asp Trp Arg Thr Asn Thr Leu Ala Lys 1490 1495 1500
- Ala Asn Lys Trp Thr Gly His Asn Val Thr Val Val Gln Arg Thr 1505 1510 1515
- Asn Thr Gln Pro Phe Asp Leu Gln Val Tyr His Pro Ser Arg Gln 1520 1530
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- Ile Asn Val Ala Arg Leu Asp Gly Ser Phe Lys Asn Ala Val Val 1685 1690 1695
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- Gln Val Ser Glu Lys Met Gly Thr Cys Ser Lys Ala Asp Gly Ser 1805 1810 1815
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- Lys Val Tyr Asp Glu Ser Ile Gln Leu Asp His Lys Gly Thr Asn 1835 1840 1845
- Pro Cys Ser Val Asn Asn Gly Asp Cys Ser Gln Leu Cys Leu Pro 1850 1855 1860

Thr Ser Glu Thr Thr Arg Ser Cys Met Cys Thr Ala Gly Tyr Ser Leu Arg Ser Gly Gln Gln Ala Cys Glu Gly Val Gly Ser Phe Leu Leu Tyr Ser Val His Glu Gly Ile Arg Gly Ile Pro Leu Asp Pro Asn Asp Lys Ser Asp Ala Leu Val Pro Val Ser Gly Thr Ser Leu Ala Val Gly Ile Asp Phe His Ala Glu Asn Asp Thr Ile Tyr Trp Val Asp Met Gly Leu Ser Thr Ile Ser Arg Ala Lys Arg Asp Gln Thr Trp Arg Glu Asp Val Val Thr Asn Gly Ile Gly Arg Val Glu Gly Ile Ala Val Asp Trp Ile Ala Gly Asn Ile Tyr Trp Thr Asp Gln Gly Phe Asp Val Ile Glu Val Ala Arg Leu Asn Gly Ser Phe Arg Tyr Val Val Ile Ser Gln Gly Leu Asp Lys Pro Arg Ala Ile Thr Val His Pro Glu Lys Gly Tyr Leu Phe Trp Thr Glu Trp Gly Gln Tyr Pro Arg Ile Glu Arg Ser Arg Leu Asp Gly Thr Glu Arg Val Val Leu Val Asn Val Ser Ile Ser Trp Pro Asn Gly Ile Ser Val Asp Tyr Gln Asp Gly Lys Leu Tyr Trp Cys Asp Ala Arg Thr

Asp Lys Ile Glu Arg Ile Asp Leu Glu Thr Gly Glu Asn Arg Glu

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- Val Val Leu Ser Ser Asn Asn Met Asp Met Phe Ser Val Ser Val 2090 2095 2100
- Phe Glu Asp Phe Ile Tyr Trp Ser Asp Arg Thr His Ala Asn Gly 2105 2110
- Ser Ile Lys Arg Gly Ser Lys Asp Asn Ala Thr Asp Ser Val Pro 2120 2125 2130
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- Ala Cys Ala Cys Ala His Gly Met Leu Ala Glu Asp Gly Ala Ser 2180 2185 2190
- Cys Arg Glu Tyr Ala Gly Tyr Leu Leu Tyr Ser Glu Arg Thr Ile 2195 2200 2205
- Leu Lys Ser Ile His Leu Ser Asp Glu Arg Asn Leu Asn Ala Pro 2210 2215 2220
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- Leu Ala Phe Asp Tyr Arg Ala Gly Thr Ser Pro Gly Thr Pro Asn 2240 2245 2250
- Arg Ile Phe Phe Ser Asp Ile His Phe Gly Asn Ile Gln Gln Ile 2255 2260 2265
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- Trp Thr Ser Tyr Thr Thr Ser Thr Ile Thr Arg His Thr Val Asp 2300 2305

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Asn Phe Ser Leu Thr Cys Asp Gly Val Pro His Cys Lys Asp Lys 2540 2545 2550

- Ser Asp Glu Lys Pro Ser Tyr Cys Asn Ser Arg Arg Cys Lys Lys 2555 2560 2565
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- Cys Ser Ser Tyr Phe Arg Leu Gly Val Lys Gly Val Leu Phe Gln 2645 2650 2655
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- Phe Ser Cys Pro Gly Thr His Val Cys Val Pro Glu Arg Trp Leu 2780 2785 2790
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- Ala Ala Gly Cys Leu Tyr Asn Ser Thr Cys Asp Asp Arg Glu Phe 2810 2815 2820
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- His Asp Arg Asp Cys Ala Asp Gly Ser Asp Glu Ser Pro Glu Cys 2840 2845 2850
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- Cys Leu Ser Arg Lys Leu Ser Gly Cys Ser Gln Asp Cys Glu Asp 2945 2950 2955
- Leu Lys Ile Gly Phe Lys Cys Arg Cys Arg Pro Gly Phe Arg Leu 2960 2965 2970
- Lys Asp Asp Gly Arg Thr Cys Ala Asp Val Asp Glu Cys Ser Thr 2975 2980 2985

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- Thr Phe Pro Cys Ser Gln Arg Cys Ile Asn Thr His Gly Ser Tyr 2990 2995 3000
- Lys Cys Leu Cys Val Glu Gly Tyr Ala Pro Arg Gly Gly Asp Pro 3005
- His Ser Cys Lys Ala Val Thr Asp Glu Glu Pro Phe Leu Ile Phe 3020 3025 3030
- Ala Asn Arg Tyr Tyr Leu Arg Lys Leu Asn Leu Asp Gly Ser Asn 3035
- Tyr Thr Leu Leu Lys Gln Gly Leu Asn Asn Ala Val Ala Leu Asp 3050 3055
- Phe Asp Tyr Arg Glu Gln Met Ile Tyr Trp Thr Asp Val Thr Thr 3065 3070 3075
- Gln Gly Ser Met Ile Arg Arg Met His Leu Asn Gly Ser Asn Val 3080 3085 3090
- Gln Val Leu His Arg Thr Gly Leu Ser Asn Pro Asp Gly Leu Ala 3095 3100 3105
- Val Asp Trp Val Gly Gly Asn Leu Tyr Trp Cys Asp Lys Gly Arg 3110 3115 3120
- Asp Thr Ile Glu Val Ser Lys Leu Asn Gly Ala Tyr Arg Thr Val 3125 3130 3135
- Leu Val Ser Ser Gly Leu Arg Glu Pro Arg Ala Leu Val Val Asp 3140 3145 3150
- Val Gln Asn Gly Tyr Leu Tyr Trp Thr Asp Trp Gly Asp His Ser
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- Leu Ile Gly Arg Ile Gly Met Asp Gly Ser Ser Arg Ser Val Ile 3170 3180
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- Val Thr Glu Arg Ile Tyr Trp Ala Asp Ala Arg Glu Asp Tyr Ile 3200 3205 3210

| Glu | Phe 3215 | Ala | Ser | Leu | | Gly 3220 | Ser | Asn | Arg | His | Val 3225 | Val | Leu | Ser |
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| Gln | Asp 3230 | Ile | Pro | His | Ile | Phe 3235 | Ala | Leu | Thr | Leu | Phe 3240 | Glu | Asp | Tyr |
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| Arg | Pro 3275 | | Asp | Leu | His | Val 3280 | | His | Ala | Leu | Arg 3285 | Gln | Pro | Asp |
| Val | Pro 3290 | | His | Pro | Cys | Lys 3295 | | Asn | Asn | Gly | Gly 3300 | Cys | Ser | Asn |
| Leu | Cys 3305 | | Leu | Ser | Pro | Gly 3310 | | Ġly | His | Lys | Cys 3315 | Ala | Cys | Pro |
| Thr | Asn 3320 | | Tyr | Leu | Gly | Ser 3325 | | Gly | Arg | Thr | Cys 3330 | Val | Ser | Asn |
| Cys | Thr 3335 | | Ser | Gln | Phe | Val 3340 | Cys | Lys | Asn | Asp | Lys 3345 | Cys | Ile | Pro |
| Phe | Trp 3350 | | Ьys | Суз | Asp | Thr 3355 | Glu | Asp | Asp | Cys | Gly 3360 | Asp | His | Ser |
| Asp | Glu 3365 | | Pro | Asp | Cys | Pro 3370 | | Phe | Lys | Cys | Arg 3375 | Pro | Gly | Gln |
| Phe | Gln 3380 | | Ser | Thr | Gly | Ile 3385 | | Thr | Asn | Pro | Ala 3390 | Phe | Ile | Cys |
| Asp | Gly 3395 | - | Asn | . Asp | Cys | Gln 3400 | | Asn | Ser | Asp | Glu 3405 | | Asn | Cys |
| Asp | Ile 3410 | | Val | . Cys | Leu | Pro 3415 | | Gln | Phe | Lys | Cys 3420 | Thr | Asn | Thr |
| Asr | Arg 3425 | - | Ile | Pro | Gly | Ile 3430 | | Arg | Cys | Asn | Gly 3435 | | Asp | Asn |

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- Ala Pro Asn Gln Phe Gln Cys Ser Ile Thr Lys Arg Cys Ile Pro 3455
- Arg Val Trp Val Cys Asp Arg Asp Asn Asp Cys Val Asp Gly Ser 3470
- Asp Glu Pro Ala Asn Cys Thr Gln Met Thr Cys Gly Val Asp Glu 3485
- Phe Arg Cys Lys Asp Ser Gly Arg Cys Ile Pro Ala Arg Trp Lys 3500 3500
- Cys Asp Gly Glu Asp Asp Cys Gly Asp Gly Ser Asp Glu Pro Lys 3515 3520 3525
- Glu Glu Cys Asp Glu Arg Thr Cys Glu Pro Tyr Gln Phe Arg Cys 3530 3535
- Lys Asn Asn Arg Cys Val Pro Gly Arg Trp Gln Cys Asp Tyr Asp 3545 3550 3555
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- Thr His Cys Lys Asp Lys Lys Glu Phe Leu Cys Arg Asn Gln Arg 3740 3745 3750
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- Ala Tyr Glu Gln Ala Phe Gln Gly Asp Glu Ser Val Arg Ile Asp 3890 3895 3900
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- Asp Pro Leu Arg Gly Thr Met Tyr Trp Ser Asp Trp Gly Asn His 4010 4015 4020
- Pro Lys Ile Glu Thr Ala Ala Met Asp Gly Thr Leu Arg Glu Thr 4025 4030 4035
- Leu Val Gln Asp Asn Ile Gln Trp Pro Thr Gly Leu Ala Val Asp 4040 4045 4050
- Tyr His Asn Glu Arg Leu Tyr Trp Ala Asp Ala Lys Leu Ser Val 4055 4060 4065
- Ile Gly Ser Ile Arg Leu Asn Gly Thr Asp Pro Ile Val Ala Ala 4070 4075 4080
- Asp Ser Lys Arg Gly Leu Ser His Pro Phe Ser Ile Asp Val Phe 4085 4090 4095
- Glu Asp Tyr Ile Tyr Gly Val Thr Tyr Ile Asn Asn Arg Val Phe 4100 4105 4110

| Lys | Ile 4115 | His | Lys | Phe | Gly | His 4120 | | Pro | Leu | Val | Asn 4125 | Leu | Thr | Gly |
|-----|-------------|-----|-------|-----|-------|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|
| Gly | Leu 4130 | Ser | His | Ala | Ser | Asp 4135 | Val | Val | Leu | Tyr | His 4140 | Gln | His | Lys |
| Gln | Pro 4145 | Glu | Val | Thr | Asn | Pro 4150 | Cys | Asp | Arg | Lys | Lys 4155 | Cys | Glu | Trp |
| Leu | Cys 4160 | | Leu | Ser | | Ser 4165 | | Pro | Val | Cys | Thr 4170 | Суз | Pro | Asn |
| Gly | Lys 4175 | | Leu | Asp | Asn | Gly 4180 | | Cys | Val | Pro | Val 4185 | Pro | Ser | Pro |
| Thr | Pro 4190 | | Pro | Asp | | Pro 4195 | | Pro | Gly | Thr | Cys 4200 | Asn | Leu | Gln |
| Cys | Phe 4205 | | Gly | Gly | Ser | Cys 4210 | Phe | Leu | Asn | Ala | Arg 4215 | Arg | Gln | Pro |
| Lys | Cys 4220 | | Сув | Gln | Pro | Arg 4225 | | Thr | Gly | | Lys 4230 | | Glu | Leu |
| Asp | Gln 4235 | _ | Trp | Glu | His | Cys 4240 | | Asn | Gly | Gly | Thr 4245 | Cys | Ala | Ala |
| Ser | Pro 4250 | | Gly | Met | Pro | Thr 4255 | | Arg | Cys | Pro | Thr 4260 | Gly | Phe | Thr |
| Gly | Pro 4265 | Lys | Cys | Thr | Gln | Gln 4270 | Val | Суз | Ala | Gly | Tyr 4275 | Суз | Ala | Asn |
| Asn | Ser 4280 | | Cys | Thr | Val | Asn 4285 | | Gly | Asn | Gln | Pro 4290 | | Cys | Arg |
| Cys | Leu 4295 | | Gly | Phe | Leu | Gly 4300 | | Arg | Cys | Gln | Tyr 4305 | | Gln | Cys |
| Ser | Gly 4310 | | · Cys | Glu | . Asn | Phe 4315 | | Thr | Cys | Gln | Met 4320 | | Ala | Asp |
| Gly | Ser 4325 | | Gln | Cys | Arg | Cys 4330 | | Ala | Tyr | Phe | Glu 4335 | | Ser | Arg |

Cys Glu Val Asn Lys Cys Ser Arg Cys Leu Glu Gly Ala Cys Val 4340 4345 4350

- Val Asn Lys Gln Ser Gly Asp Val Thr Cys Asn Cys Thr Asp Gly 4355 4360 4365
- Arg Val Ala Pro Ser Cys Leu Thr Cys Val Gly His Cys Ser Asn 4370 4375 4380
- Gly Gly Ser Cys Thr Met Asn Ser Lys Met Met Pro Glu Cys Gln 4385 4390 4395
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- Ala Cys Arg Asp Gln Ile Thr Cys Ile Ser Lys Gly Trp Arg Cys Asp 35 40 45
- Gly Glu Arg Asp Cys Pro Asp Gly Ser Asp Glu Ala Pro Glu Ile Cys 50 55 60
- Pro Gln Ser Lys Ala Gln Arg Cys Gln Pro Asn Glu His Asn Cys Leu 65 70 75 80
- Gly Thr Glu Leu Cys Val Pro Met Ser Arg Leu Cys Asn Gly Val Gln 85 90 95
- Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln 100 105 110

Gly Asn Cys Ser Arg Leu Gly Cys Gln His His Cys Val Pro Thr Leu 115 120 125

Asp Gly Pro Thr Cys Tyr Cys Asn Ser Ser Phe Gln Leu Gln Ala Asp 130 135 140

Gly Lys Thr Cys Lys Asp Phe Asp Glu Cys Ser Val Tyr Gly Thr Cys 145 150 155 160

Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 165 170 175

Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 180 185 190

Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 195 200 205

Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 210 215 220

Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 225 230 235 240

Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln Leu 245 250 255

Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 265 270

Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile Asp 275 280 285

Trp Leu Thr Gly Asn Phe Tyr Phe Val Asp Asp Ile Asp Asp Arg Ile 290 295 300

Phe Val Cys Asn Arg Asn Gly Asp Thr Cys Val Thr Leu Leu Asp Leu 305 310 315 320

Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335

Val Phe Phe Thr Asp Tyr Gly Gln Ile Pro Lys Val Glu Arg Cys Asp 340 345 350

Met Asp Gly Gln Asn Arg Thr Lys Leu Val Asp Ser Lys Ile Val Phe 355 360 365

- Pro His Gly Ile Thr Leu Asp Leu Val Ser Arg Leu Val Tyr Trp Ala 370 375 380
- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385 390 395
- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410 415
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430
- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr 435 440 445
- Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455 460
- Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 465 470 475 480
- Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 485 490 495
- Asn Ser His Lys Ala Arg Thr Cys Arg Cys Arg Ser Gly Phe Ser Leu 500 505 510
- Gly Ser Asp Gly Lys Ser Cys Lys Lys Pro Glu His Glu Leu Phe Leu 515 520 525
- Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly
 530 535 540
- Ala Lys Val Pro Asp Glu His Met Ile Pro Ile Glu Asn Leu Met Asn 545 550 560
- Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575
- Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu 580 585 590

- Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala 595 600 605
- Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro Lys 610 615 620
- Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640
- Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Val Val Asp
 650 655
- Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro Lys 660 665 670
- Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser His 675 680 685
- Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly Leu 690 695 700
- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720
- Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile Val
- Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly 740 745 750
- Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg Leu 755 760 765
- Glu Arg Gly Val Gly Gly Ala Pro Pro Thr Val Thr Leu Leu Arg Ser 770 775 780
- Glu Arg Pro Pro Ile Phe Glu Ile Arg Met Tyr Asp Ala Gln Gln 785 790 795 800
- Gln Val Gly Thr Asn Lys Cys Arg Val Asn Asn Gly Gly Cys Ser Ser 805 810 815
- Leu Cys Leu Ala Thr Pro Gly Ser Arg Gln Cys Ala Cys Ala Glu Asp 820 825 830

Gln Val Leu Asp Ala Asp Gly Val Thr Cys Leu Ala Asn Pro Ser Tyr 835 840 845

Val Pro Pro Pro Gln Cys Gln Pro Gly Glu Phe Ala Cys Ala Asn Ser 850 855 860

Arg Cys Ile Gln Glu Arg Trp Lys Cys Asp Gly Asp Asn Asp Cys Leu 865 870 875 880

Asp Asn Ser Asp Glu Ala Pro Ala Leu Cys His Gln His Thr Cys Pro 885 890 895

Ser Asp Arg Phe Lys Cys Glu Asn Asn Arg Cys Ile Pro Asn Arg Trp 900 905 910

Leu Cys Asp Gly Asp Asn Asp Cys Gly Asn Ser Glu Asp Glu Ser Asn 915 920 925

Ala Thr Cys Ser Ala Arg Thr Cys Pro Pro Asn Gln Phe Ser Cys Ala 930 935

Ser Gly Arg Cys Ile Pro Ile Ser Trp Thr Cys Asp Leu Asp Asp Asp 945 950 955 960

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Phe Pro Leu Thr Gln Phe Thr Cys Asn Asn 980 985

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Ala Cys Arg Asp Gln Ile Thr Cys Ile Ser Lys Gly Trp Arg Cys Asp 35 40 45

Gly Glu Arg Asp Cys Pro Asp Gly Ser Asp Glu Ala Pro Glu Ile Cys
50 60

Pro Gln Ser Lys Ala Gln Arg Cys Gln Pro Asn Glu His Asn Cys Leu 70 Gly Thr Glu Leu Cys Val Pro Met Ser Arg Leu'Cys Asn Gly Val Gln Asp Cys Met Asp Gly Ser Asp Glu Gly Pro His Cys Arg Glu Leu Gln 105 Gly Asn Cys Ser Arg Leu Gly Cys Gln His His Cys Val Pro Thr Leu 120 Asp Gly Pro Thr Cys Tyr Cys Asn Ser Ser Phe Gln Leu Gln Ala Asp 130 Gly Lys Thr Cys Lys Asp Phe Asp Glu Cys Ser Val Tyr Gly Thr Cys 155 145 Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Ile Cys Gly Cys Val 170 Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys Asn 185 180 Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln Asn 200 195 Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr Pro 215 210 Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn Glu 230 225 Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln Leu 245 Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His Thr 260 Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile Asp 280 275 Trp Leu Thr Gly Asn Phe Tyr Phe Val Asp Asp Ile Asp Asp Arg Ile

295

290

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- Glu Leu Tyr Asn Pro Lys Gly Ile Ala Leu Asp Pro Ala Met Gly Lys 325 330 335
- Val Phe Phe Thr Asp Tyr Gly Gln Ile Pro Lys Val Glu Arg Cys Asp 340
- Met Asp Gly Gln Asn Arg Thr Lys Leu Val Asp Ser Lys Ile Val Phe 365
- Pro His Gly Ile Thr Leu Asp Leu Val Ser Arg Leu Val Tyr Trp Ala 370 380
- Asp Ala Tyr Leu Asp Tyr Ile Glu Val Val Asp Tyr Glu Gly Lys Gly 385
- Arg Gln Thr Ile Ile Gln Gly Ile Leu Ile Glu His Leu Tyr Gly Leu 405 410 415
- Thr Val Phe Glu Asn Tyr Leu Tyr Ala Thr Asn Ser Asp Asn Ala Asn 420 425 430
- Ala Gln Gln Lys Thr Ser Val Ile Arg Val Asn Arg Phe Asn Ser Thr
 440 445
- Glu Tyr Gln Val Val Thr Arg Val Asp Lys Gly Gly Ala Leu His Ile 450 455
- Tyr His Gln Arg Arg Gln Pro Arg Val Arg Ser His Ala Cys Glu Asn 470 475 480
- Asp Gln Tyr Gly Lys Pro Gly Gly Cys Ser Asp Ile Cys Leu Leu Ala 490 495
- Asn Ser His Lys Ala Arg Thr Cys Arg Cys Arg Ser Gly Phe Ser Leu 500 510
- Gly Ser Asp Gly Lys Ser Cys Lys Lys Pro Glu His Glu Leu Phe Leu 515 525
- Val Tyr Gly Lys Gly Arg Pro Gly Ile Ile Arg Gly Met Asp Met Gly 530 540

- Ala Lys Val Pro Asp Glu His Met Ile Pro Ile Glu Asn Leu Met Asn 545 550 555
- Pro Arg Ala Leu Asp Phe His Ala Glu Thr Gly Phe Ile Tyr Phe Ala 565 570 575
- Asp Thr Thr Ser Tyr Leu Ile Gly Arg Gln Lys Ile Asp Gly Thr Glu
 580 585 590
- Arg Glu Thr Ile Leu Lys Asp Gly Ile His Asn Val Glu Gly Val Ala 595 600 605
- Val Asp Trp Met Gly Asp Asn Leu Tyr Trp Thr Asp Asp Gly Pro Lys 610 615 620
- Lys Thr Ile Ser Val Ala Arg Leu Glu Lys Ala Ala Gln Thr Arg Lys 625 630 635 640
- Thr Leu Ile Glu Gly Lys Met Thr His Pro Arg Ala Ile Met Val Asp 645 650 655
- Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro Lys
 660 665 670
- Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser His 675 680 $^{\circ}$ 685
- Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly Leu 690 695 700
- Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe Tyr 705 710 715 720
- Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile Val 725 730 735
- Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His Gly 740 745 750
- Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg Leu 755 760 765
- Glu Arg Gly Val Gly Gly Ala Pro Pro Thr Val Thr Leu Leu Arg Ser 770 775 780

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Gln Val Gly Thr Asn Lys Cys Arg Val Asn Asn Gly Gly Cys Ser Ser

Leu Cys Leu Ala Thr Pro Gly Ser Arg Gln Cys Ala Cys Ala Glu Asp 825 820

Gln Val Leu Asp Ala Asp Gly Val Thr Cys Leu Ala Asn Pro Ser Tyr

Val Pro Pro Gly Gly Arg Leu Val Pro Arg Gly Ser Tyr Pro Tyr Asp 850

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Ala Cys Gly Cys Cys Cys Thr Ala Ala Gly Ala Cys Thr Thr Gly 70 65

Cys Ala Gly Cys Cys Cys Cys Ala Ala Gly Cys Ala Gly Thr Thr Thr 90 85

Gly Cys Cys Thr Gly Cys Ala Gly Ala Gly Ala Thr Cys Ala Ala Ala 100

Thr Ala Ala Cys Cys Thr Gly Thr Ala Thr Cys Thr Cys Ala Ala Ala 120 Gly Gly Gly Cys Thr Gly Gly Cys Gly Gly Thr Gly Cys Gly Ala Cys 135 Gly Gly Thr Gly Ala Gly Ala Gly Gly Gly Ala Cys Thr Gly Cys Cys 155 Cys Ala Gly Ala Cys Gly Gly Ala Thr Cys Thr Gly Ala Cys Gly Ala 170 Gly Gly Cys Cys Cys Cys Thr Gly Ala Gly Ala Thr Thr Gly Thr 185 Cys Cys Ala Cys Ala Gly Ala Gly Thr Ala Ala Gly Gly Cys Cys 200 Ala Gly Cys Gly Ala Thr Gly Cys Cys Ala Gly Cys Cys Ala Ala Ala 215 Cys Gly Ala Gly Cys Ala Thr Ala Ala Cys Thr Gly Cys Cys Thr Gly Gly Gly Thr Ala Cys Thr Gly Ala Gly Cys Thr Gly Thr Gly Thr Gly 245 Thr Thr Cys Cys Cys Ala Thr Gly Thr Cys Cys Cys Gly Cys Cys Thr 265 Cys Thr Gly Cys Ala Ala Thr Gly Gly Gly Thr Cys Cys Ala Gly 285 275 Gly Ala Cys Thr Gly Cys Ala Thr Gly Gly Ala Cys Gly Gly Cys Thr 290 295 Cys Ala Gly Ala Thr Gly Ala Gly Gly Gly Cys Cys Cys Ala 305 Cys Thr Gly Cys Cys Gly Ala Gly Ala Gly Cys Thr Cys Cys Ala Ala 325 330 Gly Gly Cys Ala Ala Cys Thr Gly Cys Thr Cys Thr Cys Gly Cys Cys 340 345

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- Thr Cys Ala Gly Cys Thr Thr Cys Ala Gly Gly Cys Ala Gly Ala Thr 420 425 430
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Thr Gly Ala Gly Thr Gly Gly Gly Gly Cys Cys Cys Ala Gly Gly Thr 645 650 655

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Ala Cys Gly Ala Gly Cys Ala Cys Gly Cys Gly Gly Cys Ala Gly Ala 675 680 685

Cys Cys Ala Cys Ala Gly Cys Cys Ala Thr Gly Gly Ala Cys Thr Thr 690 695 700

Cys Ala Gly Cys Thr Ala Thr Gly Cys Cys Ala Ala Cys Gly Ala Gly
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Ala Cys Cys Gly Thr Ala Thr Gly Cys Thr Gly Gly Gly Thr Gly Cys
725 730 735

Ala Thr Gly Thr Thr Gly Gly Gly Gly Ala Cys Ala Gly Thr Gly Cys
740 745 750

Thr Gly Cys Thr Cys Ala Gly Ala Cys Gly Cys Ala Gly Cys Thr Cys 755 760 765

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770 775 780

Cys Thr Gly Gly Cys Cys Thr Ala Ala Ala Gly Gly Gly Cys Thr Thr 785 790 795 800

Cys Gly Thr Gly Gly Ala Thr Gly Ala Gly Cys Ala Cys Ala Cys Cys 805 810 815

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Gly Thr Cys Thr Gly Cys Ala Cys Cys Ala Cys Gly Thr Gly Gly Ala 835 840 845

- Ala Cys Ala Gly Ala Thr Gly Gly Cys Cys Ala Thr Cys Gly Ala Cys 850 855
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- Thr Cys Thr Ala Cys Thr Thr Thr Gly Thr Gly Gly Ala Thr Gly Ala 885 890 895
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- Thr Thr Thr Gly Thr Cys Thr Gly Cys Ala Ala Cys Ala Gly Ala Ala 915 920 925
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- Ala Thr Gly Gly Gly Ala Gly Ala Cys Ala Ala Thr Cys Thr Gly 1835 1840 1845
- Thr Ala Cys Thr Gly Gly Ala Cys Gly Gly Ala Cys Gly Ala Thr 1850 1855 1860
- Gly Gly Cys Cys Cys Ala Ala Ala Ala Ala Gly Ala Cys Ala 1865 1870 1875
- Ala Thr Cys Ala Gly Cys Gly Thr Gly Gly Cys Cys Ala Gly Gly 1880 1885 1890
- Cys Thr Gly Gly Ala Gly Ala Ala Ala Gly Cys Thr Gly Cys Thr 1895 1900 1905
- Cys Ala Gly Ala Cys Cys Cys Gly Cys Ala Ala Gly Ala Cys Thr 1910 1915 1920
- Thr Thr Ala Ala Thr Cys Gly Ala Gly Gly Gly Cys Ala Ala Ala 1925 1930 1935
- Ala Thr Gly Ala Cys Ala Cys Ala Cys Cys Cys Cys Ala Gly Gly 1940 1945 1950
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(

Cys Cys Ala Cys Thr Cys Ala Ala Thr Gly Gly Gly Thr Gly Gly 1970 1975 1980

Ala Thr Gly Thr Ala Cys Thr Gly Gly Ala Cys Ala Gly Ala Cys 1985 1990 1995

Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Cys Cys Cys 2000 2005 2010

Ala Ala Gly Gly Ala Cys Ala Gly Thr Cys Gly Gly Cys Gly Thr 2015 2020 2025

Gly Gly Cys Gly Gly Cys Thr Gly Gly Ala Gly Ala Gly Gly 2030 2035 2040

Gly Cys Gly Thr Gly Gly Ala Thr Gly Gly Ala Thr Gly Gly Cys 2045 2050 2055

Thr Cys Ala Cys Ala Cys Cys Gly Ala Gly Ala Cys Ala Thr Cys 2060 2065 2070

Thr Thr Gly Thr Cys Ala Cys Cys Thr Cys Cys Ala Ala Gly 2075 2080 2085

Ala Cys Ala Gly Thr Gly Cys Thr Thr Thr Gly Gly Cys Cys Cys 2090 2095 2100

Ala Ala Thr Gly Gly Gly Cys Thr Ala Ala Gly Cys Cys Thr Gly 2105 2110 2115

Gly Ala Cys Ala Thr Cys Cys Cys Gly Gly Cys Thr Gly Gly Gly 2120 2130

Cys Gly Cys Cys Thr Cys Thr Ala Cys Thr Gly Gly Gly Thr Gly 2135 2140 2145

Gly Ala Thr Gly Cys Cys Thr Thr Cys Thr Ala Cys Gly Ala Cys 2150 2155 2160

Cys Gly Cys Ala Thr Cys Gly Ala Gly Ala Cys Gly Ala Thr Ala 2165 2170 2175

Cys Thr Gly Cys Thr Cys Ala Ala Thr Gly Gly Cys Ala Cys Ala 2180 2185 2190

- Gly Ala Cys Cys Gly Gly Ala Ala Gly Ala Thr Thr Gly Thr Gly 2195 2200 2205
- Thr Ala Thr Gly Ala Ala Gly Gly Thr Cys Cys Thr Gly Ala Gly 2210 2215 2220
- Cys Thr Gly Ala Ala Cys Cys Ala Cys Gly Cys Cys Thr Thr Thr 2225 2230 2235
- Gly Gly Cys Cys Thr Gly Thr Gly Thr Cys Ala Cys Cys Ala Thr 2240 2245 2250
- Gly Gly Cys Ala Ala Cys Thr Ala Cys Cys Thr Cys Thr Thr Cys 2255 2260 2265
- Thr Gly Gly Ala Cys Thr Gly Ala Gly Thr Ala Thr Cys Gly Gly 2270 2275 2280
- Ala Gly Thr Gly Gly Cys Ala Gly Thr Gly Thr Cys Thr Ala Cys 2285 2290 2295
- Cys Gly Cys Thr Thr Gly Gly Ala Ala Cys Gly Gly Gly Thr 2300 2305 2310
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- Cys Cys Cys Ala Cys Thr Gly Thr Gly Ala Cys Cys Cys Thr Thr 2330 2340
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| Thr | Gly 2420 | Cys | Cys | Gly | Gly | Gly 2425 | Thr | Gly | Ala | Ala | Cys 2430 | | Ala | Thr |
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| Gly | Gly 2435 | - | Gly | Gly | Cys | Thr 2440 | Gly | Cys | Ala | Gly | Cys 2445 | | Gly | Суѕ |
| Суз | Thr 2450 | Gly | Thr | Gly | Cys | Thr 2455 | Thr | Gly | Gly | Cys | Cys 2460 | Ala | Cys | Суз |
| Cys | Cys 2465 | Thr | Gly | Gly | Gly | Ala 2470 | Gly | Cys | Cys | Gly | Cys 2475 | | Ala | Gly |
| Thr | Gly 2480 | _ | Gly | Суз | Cys | Thr 2485 | Gly | Thr | Gly | Cys | Thr 2490 | Gly | Ala | Gly |
| Gly | Ala 2495 | | Суз | Ala | Gly | Gly 2500 | Thr | Gly | Thr | Thr | Gly 2505 | Gly | Ala | Суз |
| Gly | Cys 2510 | | Gly | Ala | Суз | Gly 2515 | Gly | Cys | Gly | Thr | Cys 2520 | Ala | Cys | Thr |
| Thr | Gly 2525 | | Thr | Thr | Gly | Gly 2530 | Cys | Gly | Ala | Ala | Cys 2535 | Сув | Cys | Ala |
| Thr | Cys 2540 | Суз | Thr | Ala | Cys | Gly 2545 | Thr | Gly | Cys | Cys | Thr 2550 | Суз | Cys | Ala |
| Cys | Cys 2555 | _ | Cys | Ala | Gly | Thr 2560 | Gly | Cys | Cys | Ala | Gly 2565 | Суз | Cys | Ala |
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| | | | | | | 6900 |
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